

77/185

ORF d'après Cole et al. (Nature 393:537-544) et contenant Rv3576

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1/1                               31/11
taa gct tgt cgc aca tgg tgc cgg cag gga gga aca gtg ggc aag cag cta gcc ggc ctc
OCH ala cys arg thr trp cys arg gln gly gly thr val gly lys gln leu ala ala leu
61/21                               91/31
gcc ggc ctg gtc ggt ggc tgc atg ctc gca gcc gga tgc acc aac gtg gtc gac ggg acc
ala ala leu val gly ala cys met leu ala ala gly cys thr asn val val asp gly thr
121/41                               151/51
gcc gtg gct gcc gac aaa tcc gga cca ctg cat cag gat ccg ata ccg gtt tca ggc ctt
ala val ala ala asp lys ser gly pro leu his gln asp pro ile pro val ser ala leu
161/61                               211/71
gaa ggg ctg ctt ctc gac tgg agc cag atc aat gcc ggc ctg ggt ggc aca tgg atg aag
glu gly leu leu leu asp leu ser gln ile asn ala ala leu gly ala thr ser met lys
241/81                               271/91
gtg tgg ttc aac gcc aag gca atg tgg gac tgg agc aag agc gtg gcc gac aag aat tgc
val trp phe asn ala lys ala met trp asp trp ser lys ser val ala asp lys asn cys
301/101                               331/111
ctg gct atc gac ggt cca gca cag gaa aag gtc tat gcc ggc acc ggg tgg acc gct aag
leu ala ile asp gly pro ala gln glu lys val tyr ala gly thr gly trp thr ala met
361/121                               391/131
cgc gcc caa cgg ctg gat gac agc atc gat gac tcc aag aaa cgc gac cac tac gcc att
arg gly gln arg leu asp asp ser ile asp asp ser lys lys arg asp his tyr ala ile
421/141                               451/151
caa ggc gtc gtc ggc ttc ccg acc gca tat gat gcc gag gag ttc tac agc tcc tgg gtg
gln ala val val gly phe pro thr ala his asp ala glu glu phe tyr ser ser ser val
481/161                               511/171
caa agc tgg agc agc tgc tgg aac cgc cgg ttt gtc gaa gtc acc ccc gga cag gac gac
gln ser trp ser ser cys ser asn arg arg phe val glu val thr pro gly gln asp asp
541/181                               571/191
gcc gcc tgg act gtg gct gac gtt gtc aac gac aac gcc atg ctc agc agc tgg cag gtt
ala ala trp thr val ala asp val val asn asp asn gly met leu ser ser ser gln val
601/201                               631/211
cag gaa ggc gcc gac gga tgg acc tgc cag cgt gcc ctg act ggc cgc aac aac gtc act
gln glu gly gly asp gly trp thr cys gln arg ala leu thr ala arg asn asn val thr
661/221                               691/231
atc gac att gtc aag tgc gcc tat agc caa ccg gat ttg gtg ggc att gcc atc gct aac
ile asp ile val thr cys ala tyr ser gln pro asp leu val ala ile gly ile ala asn
721/241
caa atc gcc gcc aag gtt gct aag cag tag
gln ile ala ala lys val ala lys gln AMS

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SEQ ID N° 20F

FIGURE 20F

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1/1 31/11  
 GTC CTG GTC GCC GCG CAA CTG GCC GGT CCC GAT GGA AAG TGT TCA CGA TCG CCG TTC TCC  
 val leu val ala ala gln leu ala gly pro asp gly lys cys ser arg ser arg phe cys  
 61/21 91/31  
 CCG TGG TAG TGG CGA TGG TGT TAG CAG GAT TGC GGG TCG AGG CTG CGA TGG CCA GCA CCA  
 arg trp AMB trp arg trp cys AMB gln asp cys gly ser arg leu arg trp pro ala pro  
 121/41 151/51  
 GCG GCC TGC GGC TGG TCG CCG CSC GCG CCG AAA TGA TAC CCG CGA TCA CGA AAT ACA TGT  
 ala ala cys gly trp ser pro arg ala pro lys GPA tyr pro arg ser arg asn thr cys  
 181/61 211/71  
 CCG CGC TGG ACG TCG CCG TGC TGG CCA GCT CGA CCG GAC ACG ATG TGG AGG GGG CGC AGA  
 arg arg trp thr ser pro cys trp pro ala arg pro asp thr met trp arg gly arg arg  
 241/81 271/91  
 AAA ACT TCA CCG CCC GCA AGT ACG AGC TGC AGA CGC GAC TGG CCG ACA CCG ACG TCA TCG  
 lys thr ser pro pro ala ser thr ser cys arg arg asp trp pro thr pro thr ser ser  
 301/101 331/111  
 CAG ACG TGC GGT CCG GAG TGA ACA CGC TGC TCA ACG CCG CTC AGG CCG TGC TGG ATA AGA  
 gln thr cys gly arg glu GPA thr arg cys ser thr ala val arg arg cys trp ile arg  
 361/121  
 TGC TGG CCG ACA GCA TCG GCT TGC GGG ATC  
 cys trp pro thr ala ser ala cys gly ile

SEQ ID N° 21A

FIGURE 21A

32/11  
 TCC TGG TCG CCG CCG AAC TGG CCG CTC CCG ATG GAA AGT GTT CAC GAT CGC GCT TCT GCC  
 ser trp ser pro arg asn trp pro val pro met glu ser val his asp arg ala ser ala  
 62/21 92/31  
 GCT GGT AGT GGC GAT GGT GTT AGC AGC ATT GCG GGT CGA GGC TGC GAT GGC CAG CAC CAG  
 ala gly ser gly asp gly val ser arg ile ala gly arg gly cys asp gly gln his gln  
 122/41 152/51  
 CCG CCT GCG GCT GGT CCG CSC GCG CCG CGA AAT GAT ACC CCG GAT CAC GAA ATA CAT GTC  
 arg pro ala ala gly arg arg ala arg arg asn asp thr arg asp his glu ile his val  
 182/61 212/71  
 GGC GCT GGA CGT CCG CGT GCT GGC CAG CTC GAC CCG ACA CGA TGT GGA GGG GGC GCA GAA  
 gly ala gly arg arg arg ala gly gln leu asp arg thr arg cys gly gly gly ala glu  
 242/81 272/91  
 AAA CTT CAC CCG CCG CAA GTA CGA GCT GCA GAC GCG ACT GGC CGA CAC CCA CGT CAT CCG  
 lys leu his arg pro gln val arg ala ala asp ala thr gly arg his arg arg his arg  
 302/101 332/111  
 AGA CGT GCG CTC GGG AGT GAA CAC GCT GCT CAA CCG CCG TCA CCG GCT GGT GGA TAA GAT  
 arg arg ala val gly ser glu his ala ala gln arg arg ser gly ala ala gly CCG asp  
 362/121  
 GCT GGC CGA CAG CAT CCG CTT CCG GGA TC  
 ala gly arg gln his arg leu ala gly

SEQ ID N° 21B

FIGURE 21B

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33/11  
 CCT GGT CSC CCC GCA ACT GGC CGG TCC CGA TGG AAA GTG TTC ACG ATC GCG CTT CTG CCS  
 pro gly arg arg ala thr gly arg ser arg trp lys val phe thr ile ala leu leu pro  
 63/21  
 CTG GTA GTG GCG ATG GTG TTA GCA GGA TTG CGG GTC GAG GGT GCG ATG GCC AGC ACC ACC  
 leu val val ala met val leu ala gly leu arg val glu ala ala met ala ser thr ser  
 123/41  
 GGC CTG CGG CTG GTC GCC GCG CGC GCC GAA ATG ATA CCC GCG ATC ACG AAA TAC ATG TCG  
 gly leu arg leu val ala ala arg ala glu met ile pro ala ile thr lys tyr met ser  
 183/61  
 GCG CTG GAC GTC GCC GTG CTG GCC AGC TCG ACC GGA CAC GAT GTG GAG GGG GCG CAG AAA  
 ala leu asp val ala val leu ala ser ser thr gly his asp val glu gly ala gln lys  
 243/81  
 AAC TTC ACC GCC CSC AAG TAC GAG CTG CAG ACG CGA CTG GCC GAC ACC GAC GTC ATC GCA  
 asn phe thr ala arg lys tyr glu leu gln thr arg leu ala asp thr asp val ile ala  
 303/101  
 GAC GTG CGG TCG GGA GTG AAC ACG CTG CTC AAC GGC GGT CAG GCG CTG CTG GAT AAG ATG  
 asp val arg ser gly val asn thr leu leu asn gly gly gln ala leu leu asp lys met  
 363/121  
 CTG GCC GAC AGC ATC GGC TTG CGG GAT C  
 leu ala asp ser ile gly leu arg asp

SEQ ID N° 21C

FIGURE 21C

partie de la séquence nucléotidique de seq21A

1/1 31/11  
 ACC ATC GCG CTT CTG CCG CTG GTA GTG GCG ATG GTG TTA GCA GGA TTG CGG GTC GAG GGT  
 thr ile ala leu leu pro leu val val ala met val leu ala gly leu arg val glu ala  
 61/21  
 GCG ATG GCC AGC ACC AGC GGC CTG CGG CTG GTC GCC GCG CGC GCC GAA ATG ATA CCC GCG  
 ala met ala ser thr ser gly leu arg leu val ala ala arg ala glu met ile pro ala  
 121/41  
 ATC ACG AAA TAC ATG TCG GCG CTG GAC GTC GCC GTG CTG GCC AGC TCG ACC GGA CAC GAT  
 ile thr lys tyr met ser ala leu asp val ala val leu ala ser ser thr gly his asp  
 181/61  
 GTG GAG GCG GCG CAG AAA AAC TTC ACC GCC CGC AAG TAC GAG CTG CAG ACG CGA CTG GCC  
 val glu gly ala gln lys asn phe thr ala arg lys tyr glu leu gln thr arg leu ala  
 241/81  
 GAC ACC GAC GTC ATC GCA GAC GTG CGG TCG GGA GTG AAC ACG CTG CTC AAC GGC GGT CAG  
 asp thr asp val ile ala asp val arg ser gly val asn thr leu leu asn gly gly gln  
 301/101  
 GCG CTG CTG GAT AAG ATG CTG GCC GAC AGC ATC GGC TTG CGG GAT C  
 ala leu leu asp lys met leu ala asp ser ile gly leu arg asp

SEQ ID N° 21A'

FIGURE 21A'

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1/1                               31/11
CGA TCG CGC TTC TGC CGC TCG TAG TGG CGA TGG TGT TAG CAG GAT TGC GGC TCG AGG CTG
arg ser arg phe cys arg trp AMB trp arg trp cys AMB gln asp cys gly ser arg leu
61/21                               91/31
CGA TGG CCA GCA CCA GCG GCC TGC GGC TGG TCG CCG CGC GCG CCG AAA TGA TAC CCG CGA
arg trp pro ala pro ala ala cys gly trp ser pro arg ala pro lys OPA tyr pro arg
121/41                               151/51
TCA CGA AAT ACA TGT CCG CGC TGG ACG TCG CCG TGC TGG CCA GGT CGA CCG GAC ACG ATG
ser arg asn thr cys arg arg trp thr ser pro cys trp pro ala arg pro asp thr met
181/61                               211/71
TGG AGG GGG CGC ACA AAA ACT TCA CCG CGC GCA AGT ACG AGC TGC AGA CCG GAC TGG CCG
trp arg gly arg arg lys thr ser pro pro ala ser thr ser cys arg arg asp trp pro
241/81                               271/91
ACA CCG ACG TCA TCG CAG ACG TGC GGT CCG GAG TGA ACA CSC TGC TCA ACG GCG CTC AGG
thr pro thr ser ser gln thr cys gly arg glu OPA thr arg cys ser thr ala val arg
301/101                               331/111
CGC TGC TGG ATA AGA TGC TGG CCG ACA GCA TCG GCT TGC GGG ATC
arg cys trp ile arg cys trp pro thr ala ser ala cys gly ile

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SEQ ID N° 21B'

FIGURE 21B'

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1/1                               31/11
CAC GAT CGC GCT TCT GCC GCT GGT AGT GGC GAT GGT GTT AGC AGG ATT GCG GGT CGA GGC
his asp arg ala ser ala ala gly ser gly asp gly val ser arg ile ala gly arg gly
61/21                               91/31
TGC GAT GGC CAG CAC CAG CCG CCT GCG GCT GGT CGC CGC GCG CCG CGA AAT GAT ACC CGC
cys asp gly glc his gln arg pro ala ala gly arg arg ala arg arg asn asp thr arg
121/41                               151/51
GAT CAC GAA ATA CAT GTC GGC GCT GGA CGT CGC CGT GCT GGC CAG CTC GAG CCG ACA CGA
asp his glu ile his val gly ala gly arg arg arg ala gly gln leu asp arg thr arg
181/61                               211/71
TGT GGA GCG GCG GCA GAA AAA CTT CAC CGC CCG CAA GTA CGA GCT GCA GAC GCG ACT GGC
cys gly gly gly ala glu lys leu his arg pro gln val arg ala ala asp ala thr gly
241/81                               271/91
CGA CAC CGA CGT CAT CGC AGA CGT GCG GTC GCG AGT GAA CAC GCT GCT CAA CCG CCG TCA
arg his arg arg his arg arg arg ala val gly ser glu his ala ala gln arg arg ser
301/101                               331/111
GGC GCT GCT GGA TAA GAT GCT GGC CGA CAG CAT CCG GTT GCG GGA TC
gly ala ala gly CCH asp ala gly arg gln his arg leu ala gly

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SEQ ID N° 21C'

FIGURE 21C'

01/185

séquence Rv336Sc prédite par Cole et al. (Nature 393:537-544) et contenant Seq21A'

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1/1                               31/11
gtg acc atg ttc gcc cgc ccg acc atc ccg gtc gcg gcg gcc ggt tct gat att tcc gcc
val thr met phe ala arg pro thr ile pro val ala ala ala ala ser asp ile ser ala
61/21                               91/31
ccg gct caa ccg gcc cgc gcc aaa cct cag caa cgc ccg ccg tcc tgg tcc ccg cgc aac
pro ala gln pro ala arg gly lys pro gln gln arg pro pro ser trp ser pro arg asn
121/41                               151/51
tgg ccg gtc cga tgg aaa gtg ttc acg atc gcg ctt ctg ccg atg gta gtg gcg atg gtg
trp pro val arg trp lys val phe thr ile ala leu leu pro leu val val ala met val
181/61                               211/71
tta gca gga ttg ccg gtc gag gct gcg atg gcc agc acc agc gcc ctg cgg ctg gtc gcc
leu ala gly leu arg val glu ala ala met ala ser thr ser gly leu arg leu val ala
241/81                               271/91
gcg ccg gcc gaa atg ata ccg gcg atc acg aaa tac atg tcc gcg ctg gac gtc gcc gtg
ala arg ala glu met ile pro ala ile thr lys tyr met ser ala leu asp val ala val
301/101                               331/111
ctg gcc agc tcc acc gga cac gat gtg gag ggg gcg cag aaa aac ttc acc gcc cgc aag
leu ala ser ser thr gly his asp val glu gly ala gln lys asn phe thr ala arg lys
361/121                               391/131
tac gag ctg cag acg cga ctg gcc gac acc gac gtc atc gca gac gtg cgg tcc gga gtg
tyr glu leu gln thr arg leu ala asp thr asp val ile ala asp val arg ser gly val
421/141                               451/151
aac acg ctg ctg aac gcc ggt cag gcg ctg ctg gat aag gtg ctg gcc gac agc atc gcc
asn thr leu leu asn gly gly gln ala leu leu asp lys val leu ala asp ser ile gly
481/161                               511/171
ctg cgg gat cgg gtc acc gcc tac gag ccg ctg ctg ttg acg gcc cag aac gtg att gac
leu arg asp arg val thr ala tyr ala pro leu leu leu thr ala gln asn val ile asp
541/181                               571/191
gcg tcc gtg ccg gtt gac agc gag caa atc cga acc cag gtg cag ggt ttg agc cga gcc
ala ser val arg val asp ser glu gln ile arg thr gln val gln gly leu ser arg ala
601/201                               631/211
gtt gcc gcc cgc ggg cag atg acg atg cag gag atc ctg gtg act cgc gcc gcc gac ctt
val gly ala arg gly gln met thr met gln glu ile leu val thr arg gly ala asp leu
661/221                               691/231
gcc gag ccg caa ctg cgc agc gcc atg gtt acc ctg gcc gcc acc gaa ccc tcc acg ctg
ala glu pro gln leu arg ser ala met val thr leu ala gly thr glu pro ser thr leu
721/241                               751/251
ttc ggg atg agc gcg gcg ctg ggt gca gcc tcc ccg gac acc aag aac ctg cag cag caa
phe gly met ser ala ala leu gly ala gly ser pro asp thr lys asn leu gln gln gln
781/261                               811/271
atg gtg acc agg atg gcg atc atg tcc gat ccg gcc gtt gca ctg gtc aac aac cca gag
met val thr arg met ala ile met ser asp pro ala val ala leu val asn asn pro glu
841/281                               871/291
ctg ctg cac tcc ata cag atc acc cgc gac att gcc gag cag gtg atc acc gac acc acc
leu leu his ser ile gln ile thr arg asp ile ala glu gln val ile thr asp thr thr
901/301                               931/311
gag gcg gtg acg aag tcc gtg caa agc cag gcc acc gac cgg cgg gat gcc gcg att cgc
glu ala val thr lys ser val gln ser gln ala thr asp arg arg asp ala ala ile arg
961/321                               991/331
gac gcc gtg ctg gtg ttg gcc gcc acc gcg acc gcg atc gtc gtc gag ttg gtg gtg gcg
asp ala val leu val leu ala ala ile ala thr ala ile val val val leu val val ala

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SEQ ID N° 21F

FIGURE 21D  
FEUILLE DE REMPLACEMENT (REGLE 26)

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1021/341  
 cgc acg ctg gtc ggg cgg acg egg gta ctg cgt gat ggg ggg etc aag gtt gct cat acc  
 arg thr leu val gly pro met arg val leu arg asp gly ala leu lys val ala his thr  
 1081/361  
 gat etc gac ggc gag atc ggg ggg gtc cgc gcc ggc gac gag cgg atc ccc gag cca ctg  
 asp leu asp gly glu ile ala ala val arg ala gly asp glu pro ile pro glu pro leu  
 1141/381  
 gcg gtg tac acc acc gag gaa atc ggt cgg gtc ggg cat ggg gtc gac gag ctg cac acc  
 ala val tyr thr thr glu glu ile gly gln val ala his ala val asp glu leu his thr  
 1201/401  
 cgg gcc ctg ttg ctg gcc ggc gag gaa acg cgg ttg cga ctg ctg gtc aac gag atg ttt  
 arg ala leu leu leu ala gly gln glu thr arg leu arg leu leu val asp glu met phe  
 1261/421  
 gag acc atg tgg cgg cgt agc cgt tcc ctg gtc gac cag cag ctg tgg gtc acc gag cca  
 glu thr met ser arg arg ser arg ser leu val asp gln gln leu ser val ile asp gln  
 1321/441  
 ctg gag cgc aac gag gag gat ccc gcc cga etc gac age ctt ttc cgg etc gat cac ctg  
 leu glu arg asn glu glu asp pro ala arg leu asp ser leu phe arg leu asp his leu  
 1381/461  
 gcc gcc cgg ctg cgc cgc aac agc gcc aac ctg ctg gtg ctg gcc ggt gcg cag att acc  
 ala ala arg leu arg arg asn ser ala asn leu leu val leu ala gly ala gln ile thr  
 1441/481  
 cgt gac cac cgc gag cgg gtg cgg ctg tca acc gtg atc age gcc gcc gtg tca gag gtc  
 arg asp his arg glu pro val pro leu ser thr val ile ser ala ala val ser glu val  
 1501/501  
 gag gac tat cgg cgg gtc gac atc ggg agg gta ccc gac tgt ggg gta gtc ggc gcc ggg  
 glu asp tyr arg arg val asp ile ala arg val pro asp cys ala val val gly ala ala  
 1561/521  
 gct ggt ggc gtc att cat ctg ctt gcc gag cgg atc gac aac ggg ttg cgg tac tgg tca  
 ala gly gly val ile his leu leu ala glu leu ile asp asp ala leu arg tyr ser ser  
 1621/541  
 ccg acc aca ccc gtt cgg gtt gcc gcc gca atc ggc agc gaa ggc agt gtt ctg ctg cga  
 pro thr thr pro val arg val ala ala ala ile gly ser glu gly ser val leu leu arg  
 1681/561  
 atc tgg gat tcc ggc ctg ggc atg acc gat gcc gat cgg cgg atg gcc aat atg cgg ctg  
 ile ser asp ser gly leu gly met thr asp ala asp arg arg met ala asn met arg leu  
 1741/581  
 cgg gcc ggc ggt gag gtc acc cgg gat agt gcc cgg aac atg ggt ctg ttc gta gtc gcc  
 arg ala gly gly glu val thr pro asp ser ala arg his met gly leu phe val val gly  
 1801/601  
 cgg ctg gcc ggt cgg cac ggc atc cga gtc ggg ctg cgg ggt cgg gtc acc ggt gaa cag  
 arg leu ala gly arg his gly ile arg val gly leu arg gly pro val thr gly glu gln  
 1861/621  
 gcc acc ggc acc acc gcc gag gtc tac ctg ccg cta gcc gtg etc gag ggg acc gcc cca  
 gly thr gly thr thr ala glu val tyr leu pro leu ala val leu glu gly thr ala pro  
 1921/641  
 gcg cag cgg cca aag ccg cgg gta ttt ggg atc aag ccg ccg tgt cct gaa ccc ggg ggg  
 ala gln pro pro lys pro arg val phe ala ile lys pro pro cys pro glu pro ala ala  
 1981/661  
 gcc gat cgg acc gag gtt ccc gcc gcc atc ggg ccg cta cca ccg gtc acc ttg etc cgg  
 ala asp pro thr asp val pro ala ala ile gly pro leu pro pro val thr leu leu pro

SEQ ID N° 21D (suite 1)

FIGURE 21D (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

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2041/681
cgc cgt acc ccg ggg tcc agt ggc atc gcc gac gtc ccg gcc cag ccg atg cag cag ccg
arg arg thr pro gly ser ser gly ile ala asp val pro ala gln pro met gln gln arg
2101/701
ccg ccg gag ctg aaa aca ccc tgg tgg gag gat agg ttt caa cag gag ccc aaa caa ccg
arg arg glu leu lys thr pro trp trp glu asp arg phe gln gln glu pro lys gln pro
2161/721
ccc gcc cca gaa ccg cga ccg ggc ccg ccg ccc gcc aaa ccc gcg cca ccg gcg gcc ccg
pro ala pro glu pro arg pro ala pro pro pro ala lys pro ala pro pro ala gly pro
2221/741
gtt gat gac gac gtc atc tac ccg ccg atg ctc tcc gag atg gtg ggt gac ccg cag gag
val asp asp asp val ile tyr arg arg met leu ser glu met val gly asp pro his glu
2281/761
ctg gcc cac agc ccc gat ctg gac tgg aag tgg gtc tgg gac cag gcc tgg tcc gcg gcc
leu ala his ser pro asp leu asp trp lys ser val trp asp his gly trp ser ala ala
2341/781
gcc gag gcc gcg gac aag ccc gtc cag tcc cgc acc gac tac gcc ctg ccg gtc cgc gaa
ala glu ala ala asp lys pro val gln ser arg thr asp tyr gly leu pro val arg glu
2401/801
ccc ggg gcc ccg tta gtc ccg ggg gcg gcg gtc cct gag gga ccc gat ccg gag cat ccg
pro gly ala arg leu val pro gly ala ala val pro glu gly pro asp arg gln his pro
2461/821
ggc gca gcg cta gca tcc aac gcc gga ctt cat ccc gcc cga gcg ccg ccg cag gcg gtt
gly ala ala leu ala ser aac gly gly leu his pro gly arg ala pro arg his ala ala
2521/841
gcg gta ccg gac ccc gac gcg gtt cgt gcc tcc atc agc agc cat tta gcc gcc gtc cgc
ala val arg asp pro asp ala val arg ala ser ile ser ser his phe gly gly val arg
2581/861
acc ggg ccg tcc cat gcc cgc gag agc agt ccg gcc ccc aat cag caa tga
thr gly arg ser his ala arg glu ser ser gln gly pro aac gln gln opa

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SEQ ID N° 21D (suite)

FIGURE 21D (suite)

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ORF d'après par Cole et al. (Nature 393:537-544) et contenant Rv3365c

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1/1                               31/11
taa ggg tgc ggc cgg tgg cac ggc cgc ggc cac gtg acc atg ttc gcc cgc ccg acc atc
OCH gly cys gly arg trp his gly arg gly his val thr met phe ala arg pro thr ile
61/21                               31/31
ccg gtc gcg gcg gcc gat tct gat att tcc gcc ccg gct caa ccg gcc cgc gcc aaa cct
pro val ala ala ala ala ser asp ile ser ala pro ala gln pro ala arg gly lys pro
121/41                               151/51
cag caa cgc ccg ccg tcc tgg tgg ccg cgc aac tgg ccg gtc cga tgg aaa gtg ttc acc
gln gln arg pro pro ser trp ser pro arg asn trp pro val arg trp lys val phe thr
181/61                               211/71
atc gcg ctt ccg ccg ctg gta gtg gcg atg gtg tta gca gga ttg ccg gtc gag gct gcg
ile ala leu leu pro leu val val ala met val leu ala gly leu arg val glu ala ala
241/81                               271/91
atg gcc agc acc agc ggc ctg ccg ctg gtc gcc gcg cgc gcc gaa atg ata ccc gcg atc
met ala ser thr ser gly leu arg leu val ala ala arg ala glu met ile pro ala ile
301/101                               331/111
acg aaa tac atg tgg gcg ctg gac gtc gcc gtg ctg gcc agc tgg acc gga caa gat gtg
thr lys tyr met ser ala leu asp val ala val leu ala ser ser thr gly his asp val
361/121                               391/131
gag ggg gcg cag aaa aac ttc acc gcc cgc aag tac gag ctg cag acc cga ctg gcc gac
glu gly ala gln lys asn phe thr ala arg lys tyr glu leu gln thr arg leu ala asp
421/141                               451/151
acc gac gtc atc gca gac gtg ccg tgg gga gtg aac acc ctg ctc aac gcc ggt cag gcg
thr asp val ile ala asp val arg ser gly val asn thr leu leu asn gly gly gln ala
481/161                               511/171
ctg ctg gat aag gtg ctg gcc gac agc atc gcc tgg ccg gat ccg gtc acc gcc tac gcg
leu leu asp lys val leu ala asp ser ile gly leu arg asp arg val thr ala tyr ala
541/181                               571/191
ccg ctg ctg ttg acc gcc cag aac gtg att gac gcg tgg gtg ccg gtt gac agc gag caa
pro leu leu leu thr ala gln asn val ile asp ala ser val arg val asp ser glu gln
601/201                               631/211
atc cga acc cag gtg cag ggt ttg agc cga gcc gtt gcc gcc cgc gcc cag atg acc atg
ile arg thr gln val gln gly leu ser arg ala val gly ala arg gly gln met thr met
661/221                               691/231
cag gag atc ctg gtg act cgc gcc gcc gac ctt gcc gag ccg caa ctg cgc agc gcg atg
gln glu ile leu val thr arg gly ala asp leu ala glu pro gln leu arg ser ala met
721/241                               751/251
gtt acc ctg gcc gcc acc gaa ccc tgg acc ctg ttc ggg atg agc gcg gcg ctc ggt gca
val thr leu ala gly thr glu pro ser thr leu phe gly met ser ala ala leu gly ala
781/261                               811/271
ggc tgg ccg gac acc aag aac ctg cag cag caa atg gtg acc agg atg gcg atc atg tcc
gly ser pro asp thr lys asn leu gln gln gln met val thr arg met ala ile met ser
841/281                               871/291
gat ccg gcc gtt gca ctg gtc aac aac cca gag ctg ctg cac tgg ata cag atc acc cgc
asp pro ala val ala leu val asn asn pro glu leu leu his ser ile gln ile thr arg

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SEQ ID N° 21F

FIGURE 21F



85/185

961/301 931/311  
 gac att gcc gag cag gtg atc acc gac acc acc gag gcc gtg acg aag tog gtg caa agc  
 asp ile ala glu gln val ile thr asp thr thr glu ala val thr lys ser val gln ser  
 961/321 991/331  
 cag gcc acc gac cgg cgg gat gcc gcc att cgc gac gcc atg ctg gtg ttg gcc gcc atc  
 gln ala thr asp arg arg asp ala ala ile arg asp ala val leu val leu ala ala ile  
 1021/341 1051/351  
 gcc acc gcc atc gtc gtc gtg ttg gtg gtg gcc gcc acc cgc ctg gtc ggg cgc atg cgg gta  
 ala thr ala ile val val val leu val val ala arg thr leu val gly pro met arg val  
 1081/361 1111/371  
 ctg cgt gat ggg gcc ctc aag gtt gct cat acc gat ctc gac gcc gag atc gcc gcc gtc  
 leu arg asp gly ala leu lys val ala his thr asp leu asp gly glu ile ala ala val  
 1141/381 1171/391  
 cgc gcc gcc gac gag cag atc acc gag cca ctg gcc gtg tac acc acc gag gaa atc gcc  
 arg ala gly asp glu pro ile pro glu pro leu ala val tyr thr thr glu glu ile gly  
 1201/401 1231/411  
 cag gtc gcc cat gcc gtc gac gag ctg cca acc cgc gcc ctg ttg ctg gcc gcc gag gaa  
 gln val ala his ala val asp glu leu his thr arg ala leu leu leu ala gly glu glu  
 1261/421 1291/431  
 acg cgg ttg cga ctg ctg gtc aar gag atg ttt gag acc atg tog cgg cgt acc cgt tcc  
 thr arg leu arg leu leu val asn glu met phe glu thr met ser arg arg ser arg ser  
 1321/441 1351/451  
 ctg gtc gac cag cag atg tog gtc atc gac cca ctg gag cgc aac gag gag gat ccc gcc  
 leu val asp gln gln leu ser val ile asp gln leu glu arg asn glu glu asp pro ala  
 1381/461 1411/471  
 cga ctc gac agc ctt ttc cgg ctc gat cca ctg gcc gcc cgg ctg cgc cgc aac agc gcc  
 arg leu asp ser leu phe arg leu asp his leu ala ala arg leu arg arg asn ser ala  
 1441/481 1471/491  
 aac ctg ctg gtg ctg gcc ggt gcc cag att acc cgt gac cca cgc gag cag gtg ccg ctg  
 asn leu leu val leu ala gly ala gln ile thr arg asp his arg glu pro val pro leu  
 1501/501 1531/511  
 tca acc gtg atc ago gcc gcc gtg tca gag gtc gag gac tac cgc cgc gtc gac atc gcc  
 ser thr val ile ser ala ala val ser glu val glu asp tyr arg arg val asp ile ala  
 1561/521 1591/531  
 agg gta ccc gac tgt gcc gta gtc gcc gca gcc gcc ggt gcc gtc acc cat ctg ctt gcc  
 arg val pro asp cys ala val val gly ala ala ala gly gly val ile his leu leu ala  
 1621/541 1651/551  
 gag ctg atc gac aac gag ttg cgc tac tog tca cgc acc aca ccc gcc cgg gtt gcc gcc  
 glu leu ile asp asn ala leu arg tyr ser ser pro thr thr pro val arg val ala ala  
 1681/561 1711/571  
 gca atc gcc agc gaa gcc agt gtt ctg ctg cga atc tog gat tcc gcc ctg gcc atg acc  
 ala ile gly ser glu gly ser val leu leu arg ile ser asp ser gly leu gly met thr  
 1741/581 1771/591  
 gat gcc gat cgg cgg atg gcc aat arg cgg ctg cgg gcc gcc ggt gag gtc acc ccg gat  
 asp ala asp arg arg met ala asn met arg leu arg ala gly gly glu val thr pro asp  
 1801/601 1831/611  
 agt gcc cgg cac atg ggt ctg ttc gta gtc gcc cgg ctg gcc ggt cgg cac gcc atc cga  
 ser ala arg his met gly leu phe val val gly arg leu ala gly arg his gly ile arg

SEQ ID N° 21F (suite 1)

FIGURE 21F (suite 1)

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1861/621      1891/631
gtc ggg ctg agc ggt ccg gtg acc ggt gaa cag ggc acc ggc acc acc gcc gag gtc tac
val gly leu arg gly pro val thr gly glu gln gly thr gly thr thr ala glu val tyr
1921/641      1951/651
ctg ccg cta gcc gtg ctg gag ggg acg gcc cca ggc cag ccg cca aag ccg cgg gta ttt
leu pro leu ala val leu glu gly thr ala pro ala gln pro pro lys pro arg val phe
1981/661      2011/671
ggc atc aag ccg ccg tgt cct gaa ccc ggc ggc gcc gat ccg acg gac gtt ccc gcc gcc
ala ile lys pro pro cys pro glu pro ala ala ala asp pro thr asp val pro ala ala
2041/681      2071/691
atc ggg ccg cta cca ccg gtc acg ttg ctg ccg cgc cgt acc ccg ggg tcc agt gcc atc
ile gly pro leu pro pro val thr leu leu pro arg arg thr pro gly ser ser gly ile
2101/701      2131/711
gcc gac gtc ccg gcc cag ccg atg cag cag cgg cgg cgc gag ctg aaa aca ccc tgg tgg
ala asp val pro ala gln pro met gln gln arg arg arg glu leu lys thr pro trp trp
2161/721      2191/731
gag gat agg ttt caa cag gag ccc aaa caa ccg ccc gca cca gaa ccg cga ccg gcc ccg
glu asp arg phe gln gln glu pro lys gln pro pro ala pro glu pro arg pro ala pro
2221/741      2251/751
ccg ccc gcc aaa ccc ggc cca ccg gcc ggc ccg gtt gat gac gac gtc atc tac cgg cgg
pro pro ala lys pro ala pro pro ala gly pro val asp asp asp val ile tyr arg arg
2281/761      2311/771
atg ctg tcc gag atg gtg ggt gac ccg cac gag ctg gcc cac agc ccc gat ctg gac tgg
met leu ser glu met val gly asp pro his glu leu ala his ser pro asp leu asp trp
2341/781      2371/791
aag tcc gtg tgg gac cac gcc tgg tcc gcc gcc gcc gag gcc gcc gag aag ccc gtg cag
lys ser val trp asp his gly trp ser ala ala ala glu ala ala asp lys pro val gln
2401/801      2431/811
tcc cgc acg gac tac gcc ctg ccg gtg cgc gaa ccc ggg gcc cgg tta gtg ccg ggg gcc
ser arg thr asp tyr gly leu pro val arg glu pro gly ala arg leu val pro gly ala
2461/821      2491/831
ggc gtg cct gag gga ccc gat cgg gag cat ccg ggt gca ggc cta gca tcc aac gcc gga
ala val pro glu gly pro asp arg glu his pro gly ala ala leu ala ser asn gly gly
2521/841      2551/851
ctt cat ccc gcc cga gcc ccg cgg cac gcc got gcc gta cgc gac ccc gac gcc gtt agt
leu his pro gly arg ala pro arg his ala ala ala val arg asp pro asp ala val arg
2581/861      2611/871
gcc tcc atc agc agc cat tcc gcc gcc gtg cgc acc ggg ccg tcc cat gcc cgc gag agc
ala ser ile ser ser his phe gly gly val arg thr gly arg ser his ala arg glu ser
2641/881
agt cag gga ccc aat cag caa tga
ser gln gly pro asn gln gln opa

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SEQ ID N° 21F (suite 2)

FIGURE 21F (suite 2)

87/185

31/11  
 CTA CGA CAA GGC AAA GGA GCA CAG GGT GAA GCG TCG ACT GAC GGT CGC GGT AGC CGG AGC  
 leu arg gln gly lys gly ala gln gly glu ala trp thr asp gly arg gly ser arg ser  
 61/21  
 CGC CAT TCT GGT CGC AGG TCT TTC CGG ATG TTC AAG CAA CAA GTC GAC TAC AGG AAG CGG  
 arg his ser gly arg arg ser phe arg met phe lys gln gln val asp tyr arg lys arg  
 121/41  
 TGA GAC CAC GAC CGC GGC AGG CAC GAC GGC AAG CGC CGG CGC CGC ATC CGG GCC GAA GGT  
 OPA asp his asp arg gly arg his asp gly lys pro arg arg arg ile arg ala glu gly  
 181/61  
 CGT CAT CGA CGC TAA GGA CCA GAA CGT CAC CGG GTC TGT GGT GTG CAC AAC CGC GGC CGG  
 arg his arg arg OCH gly pro glu arg his arg val cys gly val his asn arg gly arg  
 241/81  
 CAA TGT CAA CAT CGC GAT CGG CGG GGC GGC GAC CGC CAT TCG CGC CGT GGT CAC CGA CGG  
 gln cys gln his arg asp arg arg gly gly asp arg his cys arg arg ala his arg arg  
 301/101  
 CAA CCC TCC GGA GGT GAA GTC CGT TGG GCT CGG TAA COT CAA CGG CGT CAC GCT GGG ATA  
 gln pro ser gly gly glu val arg trp ala arg OCH arg gln arg arg his ala gly ile  
 361/121  
 CAC GTC GGG CAC CGG ACA GGG TAA CGC TCG GCA ACC AAG GAC GGC AGC CAC TAC AAG ATC  
 his val gly his arg thr gly GCH arg ser ala thr lys asp gly ser his tyr lys ile

SEQ ID N° 22A

FIGURE 22A

32/11  
 TAC GAC AAG GCA AAG GAG CAC AGG GTC AAG GGT GGA CTC AAG GTC GCG GTA GCC GGA GCC  
 tyr asp lys ala lys glu his arg val lys arg gly leu thr val ala val ala gly ala  
 62/21  
 GCC ATT CTG GTC GCA GGT CTT TCC GGA TGT TCA ACC AAC AAG TCG ACT ACA GGA AGC GGT  
 ala ile leu val ala gly leu ser gly cys ser ser asn lys ser thr thr gly ser gly  
 122/41  
 GAG ACC ACG ACC GCG GCA GGC ACG ACG GCA AGC CGC GGC GGC GCA TCC GGG CGG AAG GTC  
 glu thr thr thr ala ala gly thr thr ala ser pro gly ala ala ser gly pro lys val  
 182/61  
 GTC ATC GAC GGT AAG GAC CAG AAC GTC ACC GGG TCT GTG GTG TCG ACA ACC GCG GCC GGC  
 val ile asp gly lys asp gln asn val thr gly ser val val cys thr thr ala ala gly  
 242/81  
 AAT GTC AAC ATC GCG ATC GGC GGG GCG GCG ACC GGC ATT GCG GCG GTC CTC ACC GAC GGC  
 asn val asn ile ala ile gly gly ala ala thr gly ile ala ala val leu thr asp gly  
 302/101  
 AAC CCT CCG GAG GTG AAG TCC GTT GGG GTC GGT AAC GTC AAC GGC GTC ACC CTC GGA TAC  
 asn pro pro glu val lys ser val gly leu gly asn val asn gly val thr leu gly tyr  
 362/121  
 ACG TCG GGC ACC GGA CAG GGT AAC GCT CGG CAA CCA AGG ACC GCA GGC ACT ACA AGA TC  
 thr ser gly thr gly gln gly asn ala arg gln pro arg thr ala ala thr thr arg

SEQ ID N° 22B

FIGURE 22B

88/185

33/11  
 ACC ACA AGG CAA AGG AGC ACA GGG TGA AGC GTG GAC TGA CCG TCG CCG TAG CCG GAG CCG  
 thr thr arg gln arg ser thr gly GPA ser val asp GPA arg ser arg AMB pro glu pro  
 63/21  
 CCA TTC TGG TCG CAG GTC TTT CCG GAT GTT CAA GCA ACA AGT CGA CTA CAG GAA GCG GTC  
 pro phe trp ser gln val phe pro asp val gln ala thr ser arg leu gln glu ala val  
 123/41  
 AGA CCA CCA CCG CCG CAG GCA CGA CCG CAA GCG CCG CCG CCG CAT CCG GCG CGA AGG TCG  
 arg pro arg pro arg gln ala arg arg gln ala pro ala pro his pro gly arg arg ser  
 183/61  
 TCA TCG ACC GTA AGG ACC AGA ACC TCA CCG GGT CTG TCG TGT GCA CAA CCG CCG CCG GCA  
 ser ser thr val arg thr arg thr ser pro gly leu trp cys ala gln pro arg pro ala  
 243/81  
 ATG TCA ACA TCG CGA TCG GCG GGG CCG CGA CCG GCA TTG CCG CCG TCG TCA CCG ACC GCA  
 met ser thr ser arg ser ala gly arg arg pro ala leu pro pro cys ser pro thr ala  
 303/101  
 ACC CTC CCG AGG TGA AGT CCG TTG GCG TCG GTA ACC TCA ACC GCG TCA CCG TCG GAT ACA  
 thr leu arg arg GPA ser pro leu gly ser val thr ser thr ala ser arg trp asp thr  
 363/121  
 COT CCG GCA CCG GAC AGG GTA ACC CTC GCG AAC CAA GGA CCG CAG CCA CTA CAA GAT C  
 arg arg ala pro asp arg val thr leu gly asp gln gly arg gln pro leu gln asp

SEQ ID N° 22C

FIGURE 22C

31/11  
 GCA CAA CCG CCG CCG GCA ATG TCA ACA TCG CGA TCG GCG GCG CCG CGA CCG GCA TTG CCG  
 ala gln pro arg pro ala met ser thr ser arg ser ala gly arg arg pro ala leu pro  
 61/21  
 CCG TGC TCA CCG ACC GCA ACC CTC CCG AGG TGA AGT CCG TTG GCG TCG GTA ACC TCA ACC  
 pro cys ser pro thr ala thr leu arg arg GPA ser pro leu gly ser val thr ser thr  
 121/41  
 CCG TCA CCG TCG GAT ACA COT CCG GCA CCG GAC AGG GTA ACC COT CCG CAA CCA AGG ACC  
 ala ser arg trp asp thr arg arg ala pro asp arg val thr pro arg gln pro arg thr  
 181/61  
 GCA GCG ACT ACA AGA TCA CAG GGT GAA GCG TCG ACT GAC GGT CCG GGT ACC CCG AGC CCG  
 ala ala thr thr arg ser gln gly gln ala trp thr asp gly arg gly ser arg ser arg  
 241/81  
 CAT TCT GGT CCG AGG TCT TTC CCG ATG TTC AAG CAA CAA GTC GAC TAC AGG AAG CCG TGA  
 his ser gly arg arg ser phe arg met phe lys gln gln val asp tyr arg lys arg GPA  
 301/101  
 GAC CAC GAC CCG GCG AGG CAC GAC GCG AAG CCC CCG CCG CCG TCG GCG CCG AAG GTC GTC  
 asp his asp arg gly arg his asp gly lys pro arg arg arg ser gly pro lys val val  
 361/121  
 ATC GAC GGT AAG GAC CAG AAC GTC ACC GCG TCG GTG GTG TCG ACA ACC GCG GCG GCG AAT  
 ile asp gly lys asp gln asn val thr gly ser val val cys thr thr ala ala gly asn  
 421/141  
 CTC AAC ATC GCG ATC CCG CCG GCG GCG ACC GCG ATT GCG GCG GTC CTC ACC GAC GCG AAC  
 val asn ile ala ile gly gly ala ala thr gly ile ala ala val leu thr asp gly asn  
 481/161  
 COT CCG GAG GTG AAG TCG GTT CCG CTC GGT AAC GTC AAC GCG GTC ACC CTC GCA TAC ACC  
 pro pro glu val lys ser val gly leu gly asp val asn gly val thr leu gly tyr thr  
 541/181  
 TCG GCG ACC GGA CAG GGT AAC GCG TCG GCA ACC AAG GAC GCG ACC CAC TAC AAG ATC  
 ser gly thr gly gln gly asn ala ser ala thr lys asp gly ser his tyr lys ile

SEQ ID N° 23A

89/185

32/11  
 CAC AAC CCG GGC CGG CAA TGT CAA CAT CGC GAT CGG CGG GGC GGC GAC CGG CAT TGC CGC  
 his asn arg gly arg gln cys gln his arg asp arg arg gly gly asp arg his cys arg  
 62/21  
 CGT GGT CAC CGA CGG CAA CCC TCC GGA GGT GAA GTC GGT TGG GCT CGG TAA CGT CAA CGG  
 arg ala his arg arg gln pro ser gly gly glu val arg trp ala arg GCH arg gln arg  
 122/41  
 CGT CAC GGT GGG ATA CAC GTC GGG CAC CGG ACA GGG TAA CGC CTC GGC AAC CAA GGA CGG  
 arg his ala gly ile his val gly his arg thr gly GCH arg leu gly asn gln gly arg  
 182/61  
 CAG CCA CTA CAA GAT CAC AGG GTG AAG CGT GGA CTG ACC GTC GCG GTA GCC GGA GCC GCC  
 gln pro leu gln asp his arg val lys arg gly leu thr val ala val ala gly ala ala  
 242/81  
 ATT CTG GTC GCA GGT CTT TCC GGA TGT TCA AGC AAC AAG TCG ACT ACA GGA AGC GGT GAG  
 ile leu val ala gly leu ser gly cys ser ser asn lys ser thr thr gly ser gly glu  
 302/101  
 ACC ACG ACC GCG GCA GGC ACG ACG GCA AGC CGC GGC GCG GGT CGG GGC CGA AGG TCG TCA  
 thr thr thr ala ala gly thr thr ala ser pro gly ala ala pro gly arg arg ser ser  
 362/121  
 TCG ACG GTA AGG ACC AGA ACG TCA CCG GGT CGG TGG TGT GCA CAA CCG CGG CCG GCA ATG  
 ser thr val arg thr arg thr ser pro ala pro trp cys ala gln pro arg pro ala met  
 422/141  
 TCA ACA TCG CGA TCG GCG GGC CGG CGA CCG GCA TTG CCG CGG TGC TCA CCG ACC GCA ACC  
 ser thr ser arg ser ala gly arg arg pro ala leu pro pro cys ser pro thr ala thr  
 482/161  
 CTC CGG AGG TGA AGT CCG TTG GGC TCG GTA ACC TCA ACG GCG TCA CGC TGG GAT ACA CGT  
 leu arg arg GGA ser pro leu gly ser val thr ser thr ala ser arg trp asp thr arg  
 542/181  
 CGG GCA CCG GAC ACG GTA ACG CCT CGG CAA CCA AGG ACG GCA GCC ACT ACA AGA TC  
 arg ala pro asp arg val thr pro arg gln pro arg thr ala ala thr thr arg

SEQ ID N° 23B

FIGURE 23B

90/185

33/11  
 ACA ACC GCG GCC GGC AAT GTC AAC ATC GCG ATC GCG GCG GCG GCG ACC GGC ATT GCG GCC  
 thr thr ala ala gly asn val asn ile ala ile gly gly ala ala thr gly ile ala ala  
 63/21  
 GTC CTC ACC GAC GGC AAC CCT CCG GAG GTG AAG TCC GTT GCG CTC GGT AAC GTC AAC GCG  
 val leu thr asp gly asn pro pro glu val lys ser val gly leu gly asn val asn gly  
 123/41  
 GTC ACG CTG GGA TAC ACG TCG GGC ACC GGA CAG GGT AAC GCG TCG GCA ACC AAG CAC GCG  
 val thr leu gly tyr thr ser gly thr gly gln gly asn ala ser ala thr lys asp gly  
 183/61  
 AGC CAC TAC AAG ATC ACA GCG TGA AGC GTG GAC TGA CCG TCG CCG TAG CCG CAG CCG CCA  
 ser his tyr lys ile thr gly CCA ser val asp CCA arg ser arg AME pro glu pro pro  
 243/81  
 TTC TGG TCG CAG GTC TTT CCG GAT GTT CAA GCA ACA AGT CCA CTA CAG GAA GCG GTG AGA  
 phe trp ser gln val phe pro asp val gln ala thr ser arg leu gln glu ala val arg  
 303/101  
 CCA CCA CCG CCG CAG GCA CCA CCG CAA GCC CCG GCG CCG CTC CCG GCC GAA GGT CGT CAT  
 pro arg pro arg gln ala arg arg gln ala pro ala pro leu arg ala glu gly arg his  
 363/121  
 CGA CCG TAA GGA CCA GAA CGT CAC CCG CTC CGT GGT GTG CAC AAC CCG GCG CCG CAA TGT  
 arg arg CCH gly pro glu arg his arg leu arg gly val his asn arg gly arg gln cys  
 423/141  
 CAA CAT CCG GAT CCG CCG GCG GCG GAC CCG CAT TCC CCG CGT GGT CAC CGA CCG CAA CCC  
 gln his arg asp arg arg gly gly asp arg his cys arg arg ala his arg arg gln pro  
 483/161  
 TCC GGA GGT GAA GTC CGT TCG GCT CCG TAA CGT CAA CCG CGT CAC GGT GGG ATA CAC GTC  
 ser gly gly glu val arg trp ala arg CCH arg gln arg arg his ala gly ile his val  
 543/181  
 GCG CAC CCG ACA GCG TAA CCG CTC GCG AAC CAA GGA CCG CAG CCA CTA CAA GAT C  
 gly his arg thr gly CCH arg leu gly asn gln gly arg gln pro leu gln asp

SEQ ID N° 23C

FIGURE 23C

91/185

31/11  
 CTA ACC ACA GGC AAA GGA GCA CAG GGT GAA GCG TGG ACT GAC GGT CGC GGT AGC CGG ACC  
 leu thr thr gly lys gly ala gln gly glu ala trp thr asp gly arg gly ser arg ser  
 61/21  
 CGC CAT TCT GGT CGC AGG TCT TTC CGG ATG TTC AAG CAA CAA GTC GAC TAC AGG AAG CGG  
 arg his ser gly arg arg ser phe arg met phe lys gln gln val asp tyr arg lys arg  
 121/41  
 TGA GAC CAC GAC CGC GGC AGG CAC GAC GGC AAG CCC CGG CGC CGC TCC GGG CGG AAG CTC  
 OPA asp his asp arg gly arg his asp gly lys pro arg arg arg ser gly pro lys val  
 181/61  
 GTC ATC GAC GGT AAG GAC CAG AAC GTC ACC GGC TCC GTC GTC TCC ACA ACC GCG GCC GGC  
 val ile asp gly lys asp gln asn val thr gly ser val val cys thr thr ala ala gly  
 241/81  
 AAT CTC AAC ATC GCG ATC GGC GGG GCG GCG ACC GCC ATT GCC GCG GTC CTC ACC GAC GGC  
 asn val asn ile ala ile gly gly ala ala thr gly ile ala ala val leu thr asp gly  
 301/101  
 AAC CCT CCG GAG GTG AAG TCC GTT GGG CTC GGT AAC GTC AAC GGC GTC ACC CTG GCA TAC  
 asn pro pro glu val lys ser val gly leu gly asn val asn gly val thr leu gly tyr  
 361/121  
 ACG TCG GCG ACC GGA CAG GGT AAC GCG TCG GCA ACC AAG GAC GCG AGC CAC TAC AAG ATC  
 thr ser gly thr gly gln gly asn ala ser ala thr lys asp gly ser his tyr lys ile

SEQ ID N° 24A

FIGURE 24A

32/11  
 TAA CGA CAG GCA AAG GAG CAC AAG GTG AAG CCG GCA CTG ACC GTC CCG GTA GCC GGA GCC  
 och arg gln ala lys gln his arg val lys arg gly leu thr val ala val ala gly ala  
 62/21  
 GCC ATT CTG GTC GCA GGT CTT TCC GGA TGT TCA ACC AAC AAG TCG ACT ACA GGA AGC GGT  
 ala ile leu val ala gly leu ser gly cys ser ser asn lys ser thr thr gly ser gly  
 122/41  
 GAG ACC ACG ACC CGC GCA GGC ACG ACG GCA ACC CCC GCG GCG GGT CCG GCG CGA AGC TCG  
 glu thr thr thr ala ala gly thr thr ala ser pro gly ala ala pro gly arg arg ser  
 182/61  
 TCA TCG ACG GTA AGG ACC AGA ACG TCA CCG GGT CCG TGG TGT GCA CAA CCG CCG CCG GCA  
 ser ser thr val arg thr arg thr ser pro ala pro trp cys ala gln pro arg pro ala  
 242/81  
 ATG TCA ACA TCG CGA TCG GCG GGG CCG GCA CCG GCA TTG CCG CCG TCG TCA CCG ACC GCA  
 met ser thr ser arg ser ala gly arg arg pro ala leu pro pro cys ser pro thr ala  
 302/101  
 ACC CTC CCG ACG TGA AGT CCG TTG GCG TCG GTA ACC TCA ACG GCG TCA CCG TGG CAT ACA  
 thr leu arg arg OPA ser pro leu gly ser val thr ser thr ala ser arg trp asp thr  
 362/121  
 CGT CCG GCA CCG GAC AGG GTA ACG CCT CCG CAA CCA ACG ACG GCA GGC ACT ACA AGA TC  
 arg arg ala pro asp arg val thr pro arg glo pro arg thr ala ala thr thr arg

SEQ ID N° 24B

FIGURE 24B

FEUILLE DE REMPLACEMENT (REGLE 26)

92/185

33/11  
AAC GAC AGG CAA AGG AGC ACA GGG TGA AGC GTG GAC TGA CCG TCG CGG TAG CCG GAG CCG  
asn asp arg gln arg ser thr gly OPA ser val asp OPA arg ser arg AMB pro glu pro  
63/21  
93/31  
CCA TTC TGG TCG CAG GTC TTT CCG GAT GTT CAA GCA ACA AOT CGA CTA CAG GAA GCG GTC  
pro phe trp ser gln val phe pro asp val gln ala thr ser arg leu gln glu ala val  
123/41  
153/51  
AGA CCA CGA CCG CGG CAG GCA CGA CCG CAA GCC CCG GCG CCG CTC CGG GCC GAA GGT CGT  
arg pro arg pro arg gln ala arg arg gln ala pro ala pro leu arg ala glu gly arg  
183/61  
213/71  
CAT CGA CCG TAA GGA CCA GAA CGT CAC CCG CTC CGT CGT GTG CAC AAC CCG GCG CCG CAA  
his arg arg OCH gly pro glu arg his arg leu arg gly val his asn arg gly arg gln  
243/81  
273/91  
TGT CAA CAT CGC GAT CCG CCG GCG GCG GAC CCG CAT TGC CCG CGT GGT CAC CGA CCG CAA  
cys gln his arg asp arg arg gly gly asp arg his cys arg arg ala his arg arg gln  
303/101  
333/111  
CCC TCC GGA GGT GAA GTC CGT TGG GCT CCG TAA CGT CAA CCG CGT CAC GGT GCG ATA CAC  
pro ser gly gly glu val arg trp ala arg OCH arg gln arg arg his ala gly ile his  
363/121  
393/131  
GTC GGG CAC CCG ACA GGG TAA CCG CTC GCG AAC CAA GGA CCG CAG CCA CTA CAA GAT C  
val gly his arg thr gly OCH arg leu gly asn gln gly arg gln pro leu gln asp

SEQ ID N° 24C

FIGURE 24C

Amorce directe

5' ACC CCG CGC ACC CTC TTG 3'

SEQ ID N° 25

FIGURE 25

Amorce inverse

3' CGA CCT TGG GAT TCG CCT 3'

SEQ ID N° 26

FIGURE 26



93/185

31/11  
 CCT ACC AGC AAG AGC CCA GGG CTT CAC AGG ACC TAA AAG GAG TAG CGC CCA TGG GCT TGA  
 pro thr ser lys ser pro gly leu his arg thr och lys glu amb arg pro trp ala opa  
 61/21  
 TCC AAT TTT CCT TCC GGC CGG TGC AAT ACC ATC TGC AAG ACC AGC GAC GGC CCG TGG TTG  
 ser asn phe pro ser ala pro cys asn thr ile cys lys thr ser asp gly pro trp leu  
 121/41  
 CGG TCG CSC AGC TTG CCG AAA CGG GGT ATG GAC CCT GCC GTA CCG TTG TTG CCA CTT GAT  
 arg ser arg ser leu arg lys arg gly met asp pro ala val pro leu leu pro leu asp  
 181/61  
 GTC GTC GCT CTC CAC CCG TCG GGG GGC GAA AGC CAT TCC GAC ACT GGG ATC CTC AAA AGG  
 val val ala leu his pro ser gly gly glu ser his ser asp thr gly ile leu lys thr  
 241/81  
 TCG GCT GAG TGT CTG CAG GGC TCC GCG GAG CAG CCG ATC ATC ACC ATG TAC GAA CTG AAT  
 ser ala glu cys leu gln gly ser gly glu gln pro ile ile thr met tyr glu leu asn  
 301/101  
 AAG TCC CCC CCG CGC GAC TTC CAG ACA TTT GTT GTG GTT TCG GTT GAG GCC GAG GCG AGG  
 lys ser pro pro arg asp phe gln thr phe val val val ser val glu ala glu ala arg  
 361/121  
 CTC ATT TCG CAG CAA GCG GTC TCC GGG TCG CAG CAT CGT TCG GGC GAT CGC GCG GCA GTC  
 leu ile ser gln gln ala val ser gly ser gln his arg cys gly asp arg gly ala val  
 421/141  
 GTC GGA CGA GTC GTC GTC AAC GAC CAC GAT C  
 val gly arg val val val asn asp his asp

SEQ ID N° 27A

FIGURE 27A

31/11  
 CTA CCA GCA AGA GCC CAG GGC TTC ACA GGA CCT AAA AGG ACT AGC GCC CAT GGG CTT GAT  
 leu pro ala arg ala gln gly phe thr gly pro lys arg ser ser ala his gly leu asp  
 61/21  
 CCA ATT TTC CTT CCG CCC CGT GCA ATA CCA TGT GCA AGA CCA GCG ACG GCC CGT GGT TGC  
 pro ile phe leu pro pro arg ala ile pro ser ala arg pro ala thr ala arg gly cys  
 121/41  
 GGT CGC GCA GCT TGC GGA AAC GGG GTA TGG ACC CTG CCG TAC CGT TGT TGC CAC TTG ATC  
 gly arg ala ala cys gly asn gly val trp thr leu pro tyr arg cys cys his leu met  
 181/61  
 TCG TCG CTC TCC ACC CGT CCG GGG GCG AAA GCC ATT CCG ACA CTG GGA TCC TCA AAA CGT  
 ser ser leu ser thr arg arg gly ala lys ala ile pro thr leu gly ser ser lys arg  
 241/81  
 CGG CTG AGT GTC TGC AGG GGT CCG GCG AGC AGC CGA TCA TCA CCA TGT ACG AAC TGA ATA  
 arg leu ser val cys arg ala pro gly ser ser arg ser ser pro cys thr asn opa ile  
 301/101  
 AGT CCC CCC CCG GCG ACT TCC AGA CAT TTG TTG TGG TTT CCG TTG AGC CCG AGG CGA GGC  
 ser pro pro arg ala thr ser arg his leu leu trp phe arg leu arg pro arg arg gly  
 361/121  
 TCA TTT CGC ASC AAG CCG TCT CCG GGT CGC AGC ATC GTT GCG GCG ATC GCG GCG CAG TCG  
 ser phe arg ser lys arg ser pro gly arg ser ile val ala ala ile ala ala gln ser  
 421/141  
 TCG GAC GAG TCG TCG TCA ACG ACC ACC ATC  
 ser asp glu ser ser ser thr thr thr ile

SEQ ID N° 27B

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 27B

94/185

33/11  
TAC CAG CAA GAG CCC AGG GCT TCA CAG GAC CTA AAA GGA GTA GCG CCC ATG GGC TTG ATC  
tyr gln gln glu pro arg ala ser gln asp leu lys gly val ala pro met gly leu ile  
63/21  
CAA TTT TCC TTC CGC CCC GTG CAA TAC CAT CTG CAA GAC CAG CGA CCG CCC GTG GTT GCG  
gln phe ser phe arg pro val gln tyr his leu gln asp gln arg arg pro val val ala  
123/41  
GTC GCG CAG CTT GCG GAA ACG GGG TAT GGA CCC TGC CGT ACC GTT GTT GCC ACT TGA TGT  
val ala gln leu ala glu thr gly tyr gly pro cys arg thr val val ala thr GPA cys  
183/61  
CGT CGC TCT CCA CCC GTC GCG GCG CGA AAG CCA TTC CGA CAC TGC GAT CCT CAA AAC GTC  
arg arg ser pro pro val gly gly arg lys pro phe arg his trp asp pro gln asn val  
243/81  
GGC TGA GTG TCT GCA GGG CTC CCG GGA GCA GCC GAT CAT CAC CAT GTA CGA ACT GAA TAA  
gly GFA val ser ala gly leu arg gly ala ala asp his his his val arg thr glu GCH  
303/101  
GTC CCC CCC GCG CGA CTT CCA GAC ATT TGT TGT GGT TTC GGT TGA GGC CGA GGC GAG GCT  
val pro pro ala arg leu pro asp ile cys cys gly phe gly GFA gly arg gly glu ala  
363/121  
CAT TTC GCA GCA AGC GGT CTC CCG GTC GCA GCA TCG TTG CCG CGA TCG CCG CCC ACT CGT  
his phe ala ala ser gly leu arg val ala ala ser leu arg arg ser arg arg ser arg  
423/141  
CGG ACG AGT CGT CGT CAA CGA CCA CGA TC  
arg thr ser arg arg gln arg pro arg

SEQ ID N° 27C

FIGURE 27C

MKTGTATTTRRLIAVLIALALPGAAVALLAEPSATGASDPCAASEVAR  
TVGSVAKSMG DYLD SHPETNQVMTAVLQQCVSPG SVASLKAHFEANFX  
VASDLKHALSQFLTDLSTNCBLPI SGLQAI GLMQAVQGARR

SEQ ID N° 28

FIGURE 28

GTGGGCAAGC	AGCTAGCCGC	GCTCCCGCG	CTGGTCGGTG	CGTGCAATGCT	CCGACCCGGA	60
TGCACCAACG	TGCTCGACGG	GACCGCCGTG	GCTGCCGACA	AATCGGACG	ACTGCATCAG	120
GATCCGATAC	CGSTTTCAGC	GCTTGAAGGG	CTGCTTCTCG	ACTTGAGCCA	GATCAATGCC	180
CGCGTGCGTG	CGACATCGAT	GAAGGTGTGG	TTCACGCGCA	AGGCAATGTG	GGACTGGAGC	240
AAGAGCGTGG	CCGACAGAA	TTGCTGCGCT	ATCGACGGTC	CAGCACAGGA	AAAGGCTCTAT	300
CCCGGACCGG	GGTGGACCGC	TATGCGCGCG	CAACGGCTGG	ATGACAGCAT	CGATGACTCC	360
AAGAAACCGG	ACCACTACGC	CATTCAAGCG	GTGCTCGGCT	TCCCGACCGC	ACATGATGCC	420
GAGGASTTCT	ACAGCTCCTC	GGTGCAAAAGC	TGGAGCAGCT	GCTCGAACCG	CCGCTTTGTC	480
GAAGTCACCC	CCGGACAGGA	CGACGCCGCC	TGGACTGTGG	CTGACGTTGT	CAACGACAAC	540
GGCATGCTCA	GTAGCTCCCA	GGTTCAGGAA	GGCGGCGACG	GATGGACCTG	CCAGCGTGCC	600
CTGACTGCGG	GCAACAAGCT	CACTATCGAC	ATTGTGACGT	CGCGCTATAG	CCAACCGGAT	660
TTGGTGCCGA	TTGGCATCGC	TAACCAAATC	GCGGCCAAGG	TTGCTAAGCA	GTAG	714

SEQ ID N° 29

FEUILLE DE REMPLACEMENT (REGLE 26)

95/185

MKKQLAALAALVGACMLAAGCTNVVVGTAADAASGSLHQDPPIPVFTSALEGLLLDLISQINAALGATS  
 MKVWFENAXAMWDSKSVADHNCCLAIDGFAQEKVYAGTGTWTAMNGQSLDDSI DQSKKRDHYAICAVV  
 GFPTAHDAEEFYSSSVQSWSSCENRRFVEVTFTFGQDDAAWTVADVVWNSGMLSSSQVQEGGGGWTCC  
 RALTANNVTIDIVTCAYSQPDLVFTTAIGIANQIAAKVAXQ

SEQ ID N° 30

FIGURE 30

1/1	31/11
AGG CGA ATA CCC GCG AGG GCA GCG CGA CCG CGG CCC TGC CCG CGC CGT GGC TGC TGA ACA	
arg arg ile pro ala arg ala ala arg arg arg pro cys arg arg arg gly cys opa thr	
61/21	91/31
ACA CAT CCC AGC CGC GCA CGC TTC CGG TAT GCG GCA GGA TAA ACG ACC CCA ACA GCA CCA	
thr his pro ser arg ala arg phe arg tyr ala ala gly GCH thr thr pro thr ala arg	
121/41	151/51
ACA CCA GGA TTG CCA CAA CCA AAG CCC TCG CGC CTG GCT CCA TTT CGC GCG CAA CGC GCG	
thr pro gly leu arg gln pro lys pro ser arg leu ala arg phe arg ala gln arg gly	
181/61	211/71
GTT CTG CCG CCT CGA TCT CAG CGC GGA GGG CGT CGA GAT C	
val leu pro pro arg ser gln arg gly gly arg arg asp	

SEQ ID N° 31A

FIGURE 31A

1/1	31/11
GCC GAA TAC CCG CGA GGG CAG CGC GAC GGC GGC CCT GCC GGC GCC CTG GCT GCT GAA CAA	
gly glu tyr pro arg gly gln arg asp gly gly pro ala gly ala val ala ala glu gln	
61/21	91/31
CAC ATC CCA GCC GCG CAC GCT TCC GGT ATG CCG CAG GAT AAA CGA CCC CAA CAG CAC GAA	
his ile pro ala ala his ala ser gly met arg gln asp lys arg pro gln gln his glu	
121/41	151/51
CAC CAG GAT TGC GAC AAC CAA AGC CCT CGC GCC TGG CTC GAT TTC GCG CGC AAC GCG GCG	
his gln asp cys asp asn gln ser pro arg ala trp leu asp phe ala arg asn ala ala	
181/61	211/71
TTC TGC CCG CTC GAT CTC AGC GCG GAG GCG GTC GAG ATC	
phe cys arg leu asp leu ser ala glu gly val glu ile	

SEQ ID N° 31B

FIGURE 31B

96/185

1/1 31/11  
 GCG AAT ACC CGC GAG GGC AGC GCG ACG GCG GCC CTG CCG CCG CCG TGG CTG CTG AAC AAC  
 ala asn thr arg glu gly ser ala thr ala ala leu pro ala pro trp leu leu asn asn  
 61/21 91/31  
 ACA TCC CAG CCG CGC AAG CTT CCG GTA TGC GGC AGC ATA AAC GAC CCC AAC ACC ACC AAC  
 thr ser gln pro arg thr leu pro val cys gly arg ile asn asp pro asn ser thr asn  
 121/41 151/61  
 ACC AGG ATT GCG ACA ACC AAA GCG CTC GCG CTT GCG TCG ATT TCG CGC GCA ACC CGG CGT  
 thr arg ile ala thr thr lys ala leu ala pro gly ser ile ser arg ala thr arg arg  
 181/61 231/71  
 TCT GCG GCG TCG ATC TCA GCG CCG ACG GCG TCG AAA TC  
 ser ala ala ser ile ser ala arg arg ala ser arg

SEQ ID N° 31C

FIGURE 31C

ORF d'après Cole et al. (Nature 393:537-544) et contenant seq31A

1/1 31/11  
 TAA AAG ACC CCA ACA GGA CGA ACA CCA GGA TTG CGA CAA CCA AAG CCC TCG CGC CTG GGT  
 GCH thr thr pro thr ala arg thr pro gly leu arg gln pro lys pro ser arg leu ala  
 61/21 91/31  
 CGA TTT CGC GCG CAA CGC GGC GTT CTG CCG CTT CGA TTT CAG CGC GGA GGG CGT CGA GAT  
 arg phe arg ala gln arg gly val leu pro pro arg ser gln arg gly gly arg arg asp  
 121/41 151/61  
 CCC CGG CGT CGT GTT CGT GGC TCA TCA TCT GCA TCC TCC GGG CTT GGC CGC GGT GAC CGG  
 pro arg arg arg val arg gly ser ser ser ala ser ser gly leu gly arg ala asp arg  
 181/61 211/71  
 CAG CCC GAC CCC AGG CAT GCG CAG GCG GCG GGC GGC CCG CGG CTG CCC GGC GGT GTG CGC  
 gln pro asp pro arg his ala gln ala asp gly ala pro arg leu pro gly gly val arg  
 241/81 271/91  
 GTC GCG GGC GCG GGT GCG GCG GTG GGT CAG GAC GCG GGC GTC GGC GAT GAG GTG GTG CGG  
 val ala gly ala gly ala ala val gly gln asp ala gly val gly asp gln val val arg  
 301/101 331/111  
 CGC CGC TTC GGT GAC ATT CGT GGT GAT GAC GTC GCG GGC AAG CAC GCG CGG CTG GCG GGC  
 arg arg phe gly asp leu arg gly asp asp val ala gly thr his ala arg leu ala gly  
 361/121 391/131  
 GGT GAA GTG CAC CAG GCG CCC GTC GCG CGC CCG CCC GGT CAT GCG CGC CGT GAC GGT GTC  
 gly glu val his gln ala pro val ala arg pro pro ala his ala arg arg asp gly val  
 421/141 451/151  
 CTT GCG CCC TTC CCC GGT GGC CAC CAG CAC CTC GAC GGC CTG CCC GAC CAG GGC GCG GTT  
 leu ala pro phe pro gly gly his gln his leu asp gly leu pro asp gln gly ala val  
 481/161 511/171  
 GGC TTC CAG CGA GAT TTG CTC CTG CAG CGC GAT CAG CGG TTC ATA GCG TTC CTG CAC AAC  
 gly phe gln arg asp leu leu leu gln arg asp gln ala phe ile ala phe leu his asn  
 541/181 571/191  
 GGC TTT CGG CAG CTG TCC GTC GAG TTG CGC GGC CGG TGT CCC GGG CCG CTT GGA GTA TTG  
 gly phe arg gln leu ser val glu leu arg gly arg cys pro gly pro leu gly val leu  
 601/201 631/211  
 GAA GGT AAG TGC GGC CGC GAA GCG GCG CCG GCG CAC CAC GTC GAG CGT GGC CGC GAA GTC  
 glu gly lys cys gly arg glu ala gly pro ala his his val glu arg gly arg glu val  
 661/221 691/231  
 CTC TTC GGT CAC CCC GGG GAA ACC GAC GAT CAG ATC GGT GGT AAT CGC GGC ATG CGG GAT  
 leu phe gly leu pro gly glu thr asp asp gln ile gly gly asn arg gly met arg asp  
 721/241 751/251  
 GGC CGC CCG CAC GCG CTC GAT GAT GCG GAG GTA GCG CTC GGC ACG ATA GGA CCG CGG CAT  
 gly arg pro his ala leu asp asp ala glu val ala leu gly thr ile gly pro pro his  
 781/261 811/271  
 CGC GCG CAG GAT CCG GTC GGA TCC GGA CTG TAG  
 arg ala gln asp pro val gly ser gly leu AMB

SEQ ID N° 31F

97/185

1/1 31/11  
 aga ctg gtg tac acg gag acc aag ctg aac tgg gca ttc tcc ttc gcc ggg cct aag tgt  
 arg leu val tyr thr glu thr lys leu asn ser ala phe ser phe gly gly pro lys cys  
 61/21 91/31  
 cta gtg aag gtc att cag aaa ctg tgg ggc ttg agc atc aac cgg ttc atc ggg att gac  
 leu val lys val ile gln lys leu ser gly leu ser ile asn arg phe ile ala ile asp  
 121/41 131/51  
 ttc gtc ggt ttc ggg cgg atg gtc gag gcc ctg ggc ggc gtc gag gta tgc agc acc acc  
 phe val gly phe ala arg met val glu ala leu gly gly val glu val cys ser thr thr  
 181/61 211/71  
 ccg ttg cgg gac tac gaa ctg ggc acg gtg ctg gag cac gcc gga cgc cag gtc att gac  
 pro leu arg asp tyr glu leu gly thr val leu glu his ala gly arg gln val ile asp  
 241/81 271/91  
 ggg cgg acc ggg ctg aac tat gtg cgc gct cgc cag gtc acc acc gag agc aat ggc gac  
 gly pro thr ala leu asn tyr val arg ala arg gln val thr thr glu ser asn gly asp  
 301/101 331/111  
 tcc ggg cgc atc aaa cgc cag cag ttg tct ttg tgg tgg ctg ctg cgt tgg atg atc  
 tyr gly arg ile lys arg gln gln leu phe leu ser ser leu leu arg ser met ile

SEQ ID N° 32A

FIGURE 32A

1/1 31/11  
 gac tgg tgt acc cgg aga cca agc tga act cgg cat tct cct tgg gcg ggc cta agt gtc  
 asp trp cys thr arg arg pro ser opa thr arg his ser pro ser ala gly leu ser val  
 61/21 91/31  
 tag tga agg tca ttc aga aac tgg cgg gct tga gca tca acc ggt tca tgg cga ttg act  
 amh opa arg ser phe arg asn cys arg ala opa ala ser thr gly ser ser arg leu thr  
 121/41 151/51  
 tgg tgg gtt tgg cgc gga tgg tag agg ccc tgg ggc ggc tgg agg tat gca gca cca ccc  
 ser ser val ser arg gly trp ser arg pro ser ala ala ser arg tyr ala ala pro pro  
 181/61 211/71  
 cgt tgc ggg act acg aac tgg gca cgg tgc tgg agc acg cgg gac gcc agg tca ttg acg  
 arg cys gly thr thr asn trp ala arg cys trp ser thr pro asp ala arg ser leu thr  
 241/81 271/91  
 ggc cga cgg cgc tga act atg tgc ggc ctg gcc agg tca cca cgg aga gca atg gcg act  
 gly arg pro arg opa thr met cys ala leu ala arg ser pro pro arg ala met ala thr  
 301/101 331/111  
 acg ggc gca tca aac gcc agc agt tgt ttt tgt cgt cgc tgc tgc gtt cga tga tc  
 thr gly ala ser asn ala ser ser cys phe cys arg arg cys cys val arg opa

SEQ ID N° 32B

FIGURE 32B

96/185

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1/1                               31/11
act ggt gta cac gga gac caa ggt gaa etc ggc att etc ctt cgg cgg gcc taa gtg tot
thr gly val his gly asp gln ala glu leu gly ile leu leu arg arg ala och val ser
61/21                               91/31
agt gaa ggt cat tca gaa act gtc ggg ett gag cat caa cgg gtt cat cgc gat tga ctt
ser glu gly his ser glu thr val gly leu glu his gln pro val his arg asp opa leu
121/41                               151/61
cgt cgg ttt cgc ggg gat ggt cga gcc ect cgg cgg cgt cga ggt arg cag cac cac ccc
arg arg phe arg ala asp gly arg gly pro arg asg arg arg gly met gln his his pro
181/61                               211/71
gtt gcg gga cta cga act ggg cac ggt gct gga gca cgc cgg acg cca ggt cat tga cgg
val ala gly leu arg thr gly his gly ala gly ala arg arg thr pro gly his opa arg
241/81                               271/91
gcc gac cgc gct gaa cta tgt ggg cgc tgc cca ggt cac cac cga gag caa tgg cga cta
ala asp arg ala glu leu cys ala arg ser pro gly his his arg glu gln trp arg leu
301/101                               331/111
cgg gcg cat caa acg cca gca gct gtt ttt gtc etc gct gct gcg ttc gat gat c
arg ala his gln thr pro ala val val phe val val ala ala ala phe asp asp

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SEQ ID N° 32C

FIGURE 32C

séquence Rv0822c prédite par Cole et al. (Nature 393:637-644) et contenant seq 32A

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1/1                               31/11
atg agt gac ggn gag agc gcc gcg cgg tgg gca cgg etc tca gag tca gca etc ccc gat
Met ser asp gly glu ser ala ala pro trp ala arg leu ser glu ser ala phe pro asp
61/21                               91/31
ggt gtt gac cga tgg atc acg gta cgg ecc gcc acc tgg ggg gca gcc cag ggt cgg cgg
gly val asp arg trp ile thr val pro pro ala thr trp val ala ala gln gly pro arg
121/41                               151/61
gac acc cag aat gtc ggc tgt cat gcc acc gcc gcc gtt agt gtg gcc gat ctg atc gcc
asp thr gln aat val gly cys his ala thr gly ala val ser val ala asp leu ile ala
181/61                               211/71
agg etc ggc ecc gct ttt ect gac etc ecc acg cac cgc cat gtc gcc ecc gaa ecc gag
arg leu gly pro ala phe pro asp leu pro thr his arg his val ala pro glu pro glu
241/81                               271/91
cca tcc ggc cgc ggc cgg aag gtc cac gac gac gcc gac gac cag cag gac acc gag gct
pro ser gly arg gly pro lys val his asp asp ala asp asp gln gln asp thr glu ala
301/101                               331/111
atc gcc atc cgg gcc cac tgg etc gag etc etc tgg gag etc ecc gac etc cgg gca gcc
ile ala ile pro ala his ser leu glu phe leu ser glu leu pro asp leu arg ala ala
361/121                               391/131
aac tat cgg cgc gcc gac cac gcc cgc cgt gaa ecc gag cta ecc gcc aag cag cta acc
asn tyr pro arg ala asp his ala arg arg glu pro glu leu pro gly lys gln leu thr
421/141                               451/151
gga tgg ggt cga gtg cgg cca ttg cgg atc cgc cga agt tgg ecc gcc ecc gcc aag cca
gly ser ala arg val arg pro leu arg ile arg arg thr ser pro ala pro ala lys pro
481/161                               511/171
ggc cgg aac tca gcc cgg cgc cgg atg gtg ctg gcc gcg cgc tgg ctg gcg gct ctg ttt
ala pro asn ser gly arg arg pro met val leu ala ala arg ser leu ala ala leu phe
541/181                               571/191
gcc gct ctg ggg ttg gcg ctg acc ggc ggg gca tgg cag tgg acc gcg tgg aag aac agc
ala ala leu ala leu ala leu thr gly gly ala trp gln trp ser ala ser lys asn ser
601/201                               631/211
cgg ctg aac arg gta agt gcg etc gac cgg cat tgg ggc gac atc gtc aac ecc agc ggg
arg leu asn met val ser ala leu asp pro his ser gly asp ile val asn pro ser gly

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SEQ ID N° 32D

99/185

661/221 691/231  
cag cat ggc gac gag aac ttc ttg ctc gtc ggt atg gac tct cgt gcc ggg gcg aac gcc  
gln his gly asp glu asn phe leu leu val gly met asp ser arg ala gly ala asn ala  
721/241 751/251  
aat atc ggc gcc ggc gac gcc gag gac gcc ggc ggc gca cgt tgg gac acc gta atg ctg  
asn ile gly ala gly asp ala glu asp ala gly gly ala arg ser asp thr val met leu  
781/261 811/271  
gtc aac att ccg gcc agc cgc gag cgg gtc gtc ggc gtc tgg ttc ccc cgc gac ctg gcg  
val asn ile pro ala ser arg glu arg val val ala val ser phe pro arg asp leu ala  
841/281 871/291  
atc act cca atc caa tgc gag gcg tgg aac ccc gag acc ggt aag tac gga ccc atc tac  
ile thr pro ile gln cys glu ala trp asn pro glu thr gly lys tyr gly pro ile tyr  
901/301 931/311  
gac gag aag acg gga aag atg ggt ccc aga ctg gtc tac acg gag acc aag ctg aac tgg  
asp glu lys thr gly thr met gly pro arg leu val tyr thr glu thr lys leu asn ser  
961/321 991/331  
gca ttc tcc ttc ggc ggg cct aag tgt cta gtc aag gtc att cag aaa ctg tgg gcc ttg  
ala phe ser phe gly gly pro lys cys leu val lys val ile gln lys leu ser gly leu  
1021/341 1051/351  
agc atc aac cgg ttc atc gcg att gac ttc gtc ggt ttc ggc cgg atg gtc gag gcc ctc  
ser ile asn arg phe ile ala ile asp phe val gly phe ala arg met val glu ala leu  
1081/361 1111/371  
ggc ggc gtc gag gta tgc agc acc acc ccg ttg cgg gac tac gaa ctg gcc acc gtc ctg  
gly gly val glu val cys ser thr thr pro leu arg asp tyr glu leu gly thr val leu  
1141/381 1171/391  
gag cac gcc gga cgc cag gtc att gac ggc ccg acc gcg ctg aac tat gtc cgc gct cgc  
glu his ala gly arg gln val ile asp gly pro thr ala leu asn tyr val arg ala arg  
1201/401 1231/411  
cag gtc acc acc gag agc aat gcc gac tac ggg cgc atc aaa cgc cag cag ttg ttt ttg  
gln val thr thr glu ser asn gly asp tyr gly arg ile lys arg gln gln leu phe leu  
1261/421 1291/431  
tcg tcg ctg ctg cgt tcg atg atc tcg acc gac acc ttg ttc aac ctc agc agc ctc aac  
ser ser leu leu arg ser met ile ser thr asp thr leu phe asn leu ser arg leu asn  
1321/441 1351/451  
aac gtc gtc aac atg ttc atc ggt aac agc tac gtc gac aac gtc aag acc aaa gac ctg  
asn val val asn met phe ile gly asn ser tyr val asp asn val lys thr lys asp leu  
1381/461 1411/471  
gac gaa ctc ggt cga tgg ttg cag cat atg ggc gcc ggg cac gtc acg ttc gtc acc gtt  
val glu leu gly arg ser leu gln his met ala ala gly his val thr phe val thr val  
1441/481 1471/491  
ccg acc ggt ata acc gac cag aac gcc gac gag ccc ccg cgt acc tcc gac atg aag gcg  
pro thr gly ile thr asp gln asn gly asp glu pro pro arg thr ser asp met lys ala  
1501/501 1531/511  
ctt ttc acc gcc atc atc gac gac gat ccg ctg ccc ctg gaa aac gat cac aac gcc cag  
leu phe thr ala ile ile asp asp asp pro leu pro leu glu asn asp his asn ala gln  
1561/521 1591/531  
cgt ctg ggc aac acc ccg tgg acc ccg ccg acc acc acc aag aag gcc ccg cag gcc ggt  
arg leu gly asn thr pro ser thr pro pro thr thr thr lys lys ala pro gln ala gly  
1621/541 1651/551  
ctg acc aac gag att cag cac cag cag gtt acc acc acc tcg cca aaa gag gtc aca gtc  
leu thr asn glu ile gln his gln gln val thr thr thr ser pro lys glu val thr val  
1681/561 1711/571  
cag gtc tct aac tcg acc gcc cag gcc ggt ttg gcc acc acc gcc acc gat cag ccc aag  
gln val ser asn ser thr gly gln ala gly leu ala thr thr ala thr asp gln leu lys  
1741/581 1771/591  
cgg aac gcc ttc aac gtc atg gct ccg gac gac tac ccg agt tcg ctg ctg gcc acc aca  
arg asn gly phe asn val met ala pro asp asp tyr pro ser ser leu leu ala thr thr  
1801/601 1831/611  
gtg ttt ttc tcg ccc ggc aac gaa cag gct gcc gcc acc gtc gcc gcc gtc ttc gcc cag  
val phe phe ser pro gly asn glu gln ala ala ala thr val ala ala val phe gly gln  
1861/621 1891/631  
cca aag atc gag cgg gtc acc ggg atc gcc caa ctg gtc cag gtc gtc ctg gcc caa gac  
ser lys ile glu arg val thr gly ile gly gln leu val gln val val leu gly gln asp

SEQ ID N° 32D (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

100/185

1921/641 1951/691  
 ttc agc ggc gtc cgc gct ccc ctg ccg agt ggc tcc acc gtc agc gtc cag ata agc cgc  
 phe ser ala val arg ala pro leu pro ser gly ser thr val ser val gln ile ser arg  
 1981/661 2011/671  
 aac tcc tcc agc cca ccg acc aag ctg ccc gag gac ctg acg gtc acc aac gcc gcc gac  
 asn ser ser ser pro pro thr lys leu pro glu asp leu thr val thr asn ala ala asp  
 2041/681  
 acc acc tgc gag tag  
 thr thr cys glu AMS

SEQ ID N° 32D (suite 2)

FIGURE 32D (suite 2)

ORF d'après Cole et al. (Nature 393:537-544) et contenant Kv0822c

1/1 31/11  
 tag gac atg agt gac ggc gag agc gcc ggc ccg tgg gca cgg ctg tcc gag tca gca ttc  
 AMS asp met ser asp gly glu ser ala ala pro trp ala arg leu ser glu ser ala phe  
 61/21 91/31  
 ccc gat ggt gtt gac cga tgg atc acg gta ccg ccc gcc aca tgg gtc gca gcc cag ggt  
 pro asp gly val asp arg trp ile thr val pro pro ala thr trp val ala ala gln gly  
 121/41 151/61  
 ccg cgg gac acc cag aat gtc ggc tgc cat gcc acc gcc gcc gtc agt gtc gcc gat ctg  
 pro arg asp thr gln asn val gly cys his ala thr gly ala val ser val ala asp leu  
 181/61 211/71  
 atc gcc agg ctg gcc ccc gcc ttt cct gac ctg ccc acg ccc cgc cat gtc gcc ccc gaa  
 ile ala arg leu gly pro ala phe pro asp leu pro thr his arg his val ala pro glu  
 241/81 271/91  
 ccc gag cca tcc gcc cgc gcc ccg aag gtc ccc gac gac gcc gac gac cag cag gac acc  
 pro glu pro ser gly arg gly pro lys val his asp asp ala asp asp gln gln asp thr  
 301/101 331/111  
 gag gct atc gcc atc ccg gcc ccc tgg ctg gag ttc ctg tgg gag ctt ccc gac ctg cgg  
 glu ala ile ala ile pro ala his ser leu glu phe leu ser glu leu pro asp leu arg  
 361/121 391/131  
 gca gcc aac tat ccg cgc gcc gac ccc gcc cgt gaa ccc gag cta ccc gcc aag cag  
 ala ala asn tyr pro arg ala asp his ala arg arg glu pro glu leu pro gly lys gln  
 421/141 451/151  
 cta acc gga tgg gct cga gtc ccg cca tgg ccg atc cgc cga acg tgg ccc gcc ccc gcc  
 leu thr gly ser ala arg val arg pro leu arg ile arg arg thr ser pro ala pro ala  
 481/161 511/171  
 aag cca gcc ccg aac tcc ggc ccg cgc ccg atg gtc ctg gac gcc cgc tgg ctg gcc gct  
 lys pro ala pro asn ser gly arg arg pro met val leu ala ala arg ser leu ala ala  
 541/181 571/191  
 ctg ttt gcc gct ctg gcc trp gcc ctg acc gcc ggg gca tgg cag tgg agc gcc tgg aag  
 leu phe ala ala leu ala leu ala leu thr gly gly ala trp gln trp ser ala ser lys  
 601/201 631/211  
 aac agc cgg ctg aac atg gta agc gcc ctg gac ccg cat tgg gcc gac atc gtc aac ccc  
 asn ser arg leu asn met val ser ala leu asp pro his ser gly asp ile val asn pro  
 661/221 691/231  
 agc ggg cag cat gcc gac gag aac ttc ttg ctg gtc cgt atg gac tat cgt gcc ggg gcc  
 ser gly gln his gly asp glu asn phe leu leu val gly met asp ser arg ala gly ala  
 721/241 751/251  
 aac gcc aat atc gcc gcc gcc gac gcc gag gac gcc gcc gcc gaa cgt tgg gac acc gtc  
 asn ala asn ile gly ala gly asp ala glu asp ala gly gly ala arg ser asp thr val  
 781/261 811/271  
 atg ctg gtc aac att ccg gcc agc cgc gag cgc gtc gtc gcc gtc tgg ttc ccc cgc gac  
 met leu val asn ile pro ala ser arg glu arg val val ala val ser phe pro arg asp

SEQ ID N° 32F

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 32F



101/185

841/281 871/291  
 ctg gcg atc acc cca atc caa tgc gag gcg tgg aac ccc gag acc ggt aag tac gga ccc  
 leu ala ile thr pro ile gln cys glu ala trp asn pro glu thr gly lys tyr gly pro  
 901/301 931/311  
 arc tac gac gag aag aag gga aag atg ggt ccc aga ctg gtg tac acg gag acc aag ctg  
 ile tyr asp glu lys thr gly thr met gly pro arg leu val tyr thr glu thr lys leu  
 961/321 991/331  
 aac tgc gca ttc tcc ttc ggc ggg cct aag tgt cta gtc aag gtc att cag aaa ctg tgc  
 aen eer ala phe eer phe gly gly pro lys cys leu val lys val ile gln lys leu eer  
 1021/341 1051/351  
 ggc ttg agc atc aac cgg ttc atc gcg att gac ttc gtc ggt ttc gcg cgg atg gtc gag  
 gly leu eer ile aen arg phe ile ala ile asp phe val gly phe ala arg met val glu  
 1081/361 1111/371  
 gcc ctg ggc ggc gtc gag gta tgc agc acc acc cgg ttg cgg gac tac gaa ctg ggc aag  
 ala leu gly gly val glu val cys eer thr thr pro leu arg asp tyr glu leu gly thr  
 1141/381 1171/391  
 gtg ctg gag caa gcc gga cgc cag gtc att gac ggg cgg acc gcg ctg aac tar gtc cgc  
 val leu glu his ala gly arg gln val ile asp gly pro thr ala leu aen tyr val arg  
 1201/401 1231/411  
 gct cgc cag gtc acc acc gag agc aat ggc gac tac ggc cgc atc aaa cgc cag cag ttg  
 ala arg gln val thr thr glu eer aen gly asp tyr gly arg ile lys arg gln gln leu  
 1261/421 1291/431  
 ttt ttg tgc tgc ctg ctg cgt tgc atg atc tgc acg gac acc ttg ttc aac ctg agc agc  
 phe leu eer eer leu leu arg eer met ile eer thr asp thr leu phe aen leu eer arg  
 1321/441 1351/451  
 ctc aac aac gtc gtc aac atg ttc atc ggt aac agc tac gtc gac aac gtc aag acc aaa  
 leu aen aen val val aen met phe ile gly aen eer tyr val asp aen val lys thr lys  
 1381/461 1411/471  
 gac ctg gtc gaa ctg ggt cga tgc ctg cag cat atg gcg gcc ggc cag gtc acc ttc gtc  
 asp leu val glu leu gly arg eer leu gln his met ala ala gly his val thr phe val  
 1441/481 1471/491  
 acc gtt cgg acc ggt ata acc gac cag aac ggc gac gag ccc cgg cgt acc tcc gac atg  
 thr val pro thr gly ile thr asp gln aen gly asp glu pro pro arg thr eer asp met  
 1501/501 1531/511  
 aag gcg ctt ttc acc gcc atc atc gac gac gat cgg ctg ccc ctg gaa aac gat ccc aac  
 lys ala leu phe thr ala ile ile asp asp asp pro leu pro leu glu aen asp his aen  
 1561/521 1591/531  
 gcc cag cgt ctg ggc aac acg ccg tgc acc ccg ccg acc acc acc aag aag gcg ccg cag  
 ala gln arg leu gly aen thr pro eer thr pro pro thr thr thr lys lys ala pro gln  
 1621/541 1651/551  
 gcg ggt ctg acc aac gag att cag caa cag cag ggt acc gcg acc tgc cca aac gag gtc  
 ala gly leu thr aen glu ile gln his gln gln val thr thr thr eer pro lys glu val  
 1681/561 1711/571  
 aca gtg cag gtc tct aac tgc acc ggc cag gcc ggt ttg gcc acc acc gcc acc gat cag  
 thr val gln val eer aen eer thr gly gln ala gly leu ala thr thr ala thr asp gln  
 1741/581 1771/591  
 ctg aag cgg aac gcc ttc aac gtc atg ggt cgg gac gac tac cgg agt tgc ctg ctg gcc  
 leu lys arg aen gly phe aen val met ala pro asp asp tyr pro eer eer leu leu ala  
 1801/601 1831/611  
 acc aca gtg ttc tct tgc acc gcc aac gaa cag gct gcc gcc acc gtg gcc gcc gtc ttc  
 thr thr val phe phe eer pro gly aen glu gln ala ala ala thr val ala ala val phe  
 1861/621 1891/631  
 ggc cag tca aag acc gag cgg ctg acc ggc atc gcc caa ctg gtc cag gtc gtc ctg ggc  
 gly gln eer lys ile glu arg val thr gly ile gly gln leu val gln val val leu gly  
 1921/641 1951/651  
 caa gac ttc agc gcg gtc cgc gct ccc ctg cgg agt gcc tcc acc gtc agc gtc cag ata  
 gln asp phe eer ala val arg ala pro leu pro eer gly eer thr val eer val gln ile  
 1981/661 2011/671  
 agc cgc aac tcc tcc agc cca ccg acc aag ctg ccc gag gac ctg aag gtc acc acc gcc  
 eer arg aen eer eer eer pro pro thr lys leu pro glu asp leu thr val thr aen ala  
 2041/681  
 gcc gac acc acc tgc gag tag  
 ala asp thr thr cys glu AAG

SEQ ID 32F (suite 1)

FIGURE 32F (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

102/105

1/1 31/11  
 CGT CAC CTC TGC CAT GGT CCA TCT ACG GTA TCT GCG ACA AGG GCA GCG TCG ATC CCT CGA  
 arg his leu cys his gly pro ser thr val ser ala thr arg ala ala ser ile pro arg  
 61/21 91/31  
 CAT SCA GAG TCG GTG TTC GGT TCA CGC GAA CTA GGC GCG CCT AGC CTG GAC GAG TCC CCG  
 his ala glu ser val phe ala ser arg glu leu gly ala pro ser leu asp glu ser pro  
 121/41 151/51  
 GGC CGA CAT TCG CCC GAG GCC TTG GCC TCC ATC ACC TAA TTG TGT GCA AAA CCG TAT CTA  
 gly arg his ser pro glu ala leu ala ser ile thr OCH leu cys ala lys pro tyr leu  
 181/61 211/71  
 ATT GAT ACG ATT GCG CAC ATG GGT ATC TGG GAT C  
 ile asp thr ile ala his met ala ile trp asp

SEQ ID N° 33A

FIGURE 33A

1/1 31/11  
 GTC ACC TCT GCC ATG GTC CAT CTA CGG TAT CTG CGA CAA GGG CAG GGT CGA TCC CTC GAC  
 val thr ser ala met val his leu arg tyr leu arg gln gly gln arg arg ser leu asp  
 61/21 91/31  
 ATG CAG AGT CCG TGT TCG CTT CAC GCG AAC TAG GCG CGC CTA GCC TGG ACG AGT CCC CCG  
 met gln ser arg cys ser leu his ala asn AMB ala arg leu ala trp thr ser pro arg  
 121/41 151/51  
 GCC GAC ATT CGC CCG AGG CTT TGG CCT CCA TCA CCT AAT TGT GTG CAA AAC CGT ATC TAA  
 ala asp ile arg pro arg pro trp pro pro ser pro asn cys val gln asn arg ile OCH  
 181/61 211/71  
 TTG ATA CGA TTG CCG ACA TGG CTA TCT GGG ATC  
 leu ile arg leu arg thr trp leu ser gly ile

SEQ ID N° 33B

FIGURE 33B

1/1 31/11  
 CCG TCA CCT CTG CCA TGG TCC ATC TAC GGT ATC TGC GAC AAG GGC AGC GTC GAT CCC TCG  
 pro ser pro leu pro trp ser ile tyr gly ile cys asp lys gly ser val asp pro ser  
 61/21 91/31  
 ACA TSC ACA GTC GGT GTT CGC TTC ACG CGA ACT AGG CGC GCC TAG CCT GGA CGA GTC CCC  
 thr cys arg val gly val arg phe thr arg thr arg arg ala AMB pro gly arg val pro  
 121/41 151/51  
 GGG CCG ACA TTC GCC CGA GGC CTT GGC CTC CAT CAC CTA ATT GTG TGC AAA ACC GTA TCT  
 gly pro thr phe ala arg gly leu gly leu his his leu ile val cys lys thr val ser  
 181/61 211/71  
 AAT TGA TAC GAT TGC GCA CAT GGC TAT CTG GGA TC  
 asn OPA tyr asp cys ala his gly tyr leu gly

SEQ ID N° 33C

FIGURE 33C  
 FEUILLE DE REMPLACEMENT (REGLE 26)

103/185

séquence Rv1344 prédite par Cole et al. (Nature 353:537-544) et contenant seq33A

```

1/1                               31/11
ttg tgt gca asa cag tat cta att gat acg att gog cac atg get atc tgg gat cgc ctc
leu cys ala lys pro tyr leu ile asp thr ile ala his met ala ile trp asp arg leu
61/21                               91/31
gtc gag gtt gcc gcc gag caa cat ggc tac gtc acg act cgc gat gog cga gac atc gcc
val glu val ala ala glu gln his gly tyr val thr thr acg asp ala arg asp ile gly
121/41                               151/51
gtc gac cct gtg cag ctc cgc ctc cta gog ggg cgc gga cgt ctt gag cgt gtc gcc cga
val asp pro val gln leu arg leu leu ala gly arg gly arg leu glu arg val gly arg
181/61                               211/71
ggt gtg tac cgg gtg ccc gtg ctg ccg cgt ggt gag cac gac gat ctc gca gcc gca gtg
gly val tyr arg val pro val leu pro arg gly glu his asp asp leu ala ala ala val
241/81                               271/91
tcg tgg act ttg ggg cgt gcc gtc atc tcg cat gag tcg gcc ttg gog ctt cat gcc ctc
ser trp thr leu gly arg gly val ile ser his glu ser ala leu ala leu his ala leu
301/101                               331/111
gct gac gtg aac ccg tcg cgc atc cat ctc acc gtc ccg cgc aac aac cat ccg cgt gcc
ala asp val asn pro ser arg ile his leu thr val pro arg asn asn his pro arg ala
361/121                               391/131
gcc ggg gcc gag cag tac cga gtt cac cgc cgc gac ctc aag gca gcc cac gtc act tcg
ala gly gly glu leu tyr arg val his arg arg asp leu gln ala ala his val thr ser
421/141                               451/151
gtc gac gga ata ccc gtc acg acg gtt ggg cgc acc atc asa gac tgc gtg aag acg gcc
val asp gly ile pro val thr thr val ala arg thr ala lys asp cys val lys thr gly
481/161                               511/171
acg gat cct tat cag ctt cgg gcc gog atc gag cga gcc gaa gcc gag gcc acg ctt cgt
thr asp pro tyr gln leu arg ala ala ile glu arg ala glu ala glu gly thr leu arg
541/181                               571/191
cgt ggg tca gaa got gag cta cgc got ggg ctc gat gag acc act gcc gga tta cgc got
arg gly ser ala ala glu leu arg ala ala leu asp glo thr thr ala gly leu arg ala
601/201
cgg ccg aag cga gca tcg gog tga
arg pro lys arg ala ser ala OPA

```

SEQ ID N° 33D

FIGURE 33D

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ORF d'après Cole et al. (Nature 393:537-544) et contenant Rv1944

```

1/1                               31/11
taa ttg tgt gca aaa ccg tat cta att gat acg att gcg cac atg gct atc tgg gat cgc
OCH leu cys ala lys pro tyr leu ile asp thr ile ala his met ala ile trp asp arg
61/21                               91/31
ctc gtc gag gtt gcc gcc gag caa cat gcc tac gtc acg act cgc gat gcg cga gac atc
leu val glu val ala ala glu gln his gly tyr val thr thr arg asp ala arg asp ile
121/41                               151/51
ggc gtc gac cct gtg cag ctc cgc ctc cta gcc ggg cgc gga cgt ctt gag cgt gtc gcc
gly val asp pro val gln leu arg leu leu ala gly arg gly arg leu glu arg val gly
181/61                               211/71
cga ggt gtg tac cag gtg ccc gtg ctg ccg cgt ggt gag cac gac gat ctc gca gcc gca
arg gly val tyr arg val pro val leu pro arg gly glu his asp asp leu ala ala ala
241/81                               271/91
gtg tgg tgg act ttg ggg cgt gcc gtt atc tgg cat gag tgg gcc ttg gcg ctt cat gcc
val ser trp thr leu gly arg gly val ile ser his glu ser ala leu ala leu his ala
301/101                               331/111
ctc gct gac gtg aac ccg tgg cgc atc cat ctc acc gtc ccg cgc aac aac cat ccg cgt
leu ala asp val asn pro ser arg ile his leu thr val pro arg asn asn his pro arg
361/121                               391/131
ggc gcc ggg gcc gag ctg tac cga gtt cac cgc cgc gac ctc cag gca gcc cac gtc act
ala ala gly gly glu leu tyr arg val his arg arg asp leu gln ala ala his val thr
421/141                               451/151
tcg gtc gac gga ata ccc gtc acg acg gtt gcc cgc acc atc aaa gac tgc gtg aag acg
ser val asp gly ile pro val thr thr val ala arg thr ile lys asp cys val lys thr
481/161                               511/171
ggc acg gat cct tat cag ctt cgg gcc gcc atc gag cga gcc gaa gcc gag gcc acg ctt
gly thr asp pro tyr gln leu arg ala ala ile glu arg ala glu ala glu gly thr leu
541/181                               571/191
cgt cgt ggg tca gca gct gag cta cgc gct gcc ctc gat gag acc act gcc gga tta cgc
arg arg gly ser ala ala glu leu arg ala ala leu asp glu thr thr ala gly leu arg
601/201
gct cgg ccg aag cga gca tgg gcc tga
ala arg pro lys arg ala ser ala C9A

```

SEQ ID N° 33F

FIGURE 33F

```

1/1                               31/11
ATC CAA CTT GCT GGG CCT GCG CCT TCG AAT CGA CCG CCA GCG CAC CCG TCG CTG CCG GCA
ile gln pro ala gly pro ala pro ser asn arg arg pro gly his arg ser leu pro ala
61/21                               91/31
ACA ACA CTT CGA ATG GGG ACC TTT TCG CTG TTG CTG GTA ACC GGG ACA ACC GCG ACC ACC
thr thr pro gly met gly thr phe ser val leu leu val thr gly thr thr gly thr thr
121/41                               151/51
CCT CCG TCG AGA COT ATC GCG GCA GCG TTG GCC CTG TCG TTG CTG ACA ATT ACC COT GCG
pro arg ser arg arg ile ala ala ala leu ala leu ser leu leu thr ile thr ala gly
181/61                               211/71
CGC CGC ATA TTT GCC GCG CTG CCG CCG GCC GGA TC
arg arg ile phe ala ala leu pro arg ala gly

```

SEQ ID N° 34A

FIGURE 34A  
FEUILLE DE REMPLACEMENT (REGLE 26)

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```

1/1                               31/11
TCC AAC CTG CTG GGC CTG CSC CTT CGA ATC GAC GGC CAG GCC ACC GGT CSC TGC CCG CAA
ser asn leu leu gly leu arg leu arg ile asp gly gln ala thr ala arg cys arg gln
61/21                               91/31
CAA CAC CTG GAA TGG GGA CCT TTT CCG TGT TGC TGG TAA CCG GGA CAA CCG GCA CCA CGC
gln his leu glu trp gly pro phe arg cys cys trp GCH pro gly gln pro ala pro arg
121/41                               151/51
CTC GGT CGA GAC GTA TCG CCG CAG CGT TGG CCC TGT CCT TGC TGA CAA TTA CCG CTG GGC
leu gly arg asp val ser arg gln arg trp pro cys arg cys GPA gln leu pro leu ala
181/61                               211/71
GCC GCA TAT TTG CCG CSC TGC CSC GGG CCG GAT C
ala ala tyr leu pro arg cys arg gly pro asp

```

SEQ ID N° 34B

FIGURE 34B

```

1/1                               31/11
GAT CCA ACC TGC TGG GGC TGC GCC TTC GAA TCG ACC GGC ACC CCA CCG CTC GGT GCC GGC
asp pro thr cys trp ala cys ala phe glu ser thr ala arg pro pro leu ala ala gly
61/21                               91/31
AAC AAC ACC TGG AAT CCG GAC CTT TTC GGT GTT GGT GGT AAC CCG GAC AAC CCG CAC CAC
asn asn thr trp asn gly asp leu phe gly val ala gly asn arg asp asn arg his his
121/41                               151/51
GCC TCG CTC GAG ACC TAT CSC GGC AGC GTT GGC CCT CTC GTT GGT GAC AAT TAC CCG TGG
ala ser val glu thr tyr arg gly ser val gly pro val val ala asp asn tyr arg trp
181/61                               211/71
CCG CCG CAT APT TGC CSC GGT GGC GCG GCG CCG ATC
pro pro his ile cys arg ala ala ala gly arg ile

```

SEQ ID N° 34C

FIGURE 34C

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ORF d'après Cole et al. (Nature 353:537-544) contenant seq34A

```

1/1                               31/11
tag cag cag ggc cct gag get agg cgc ggc cgg tgc cgt tgg ccg cgg cgg caa tgc atg
AMB pro gln gly pro ala ala arg arg gly arg cys arg trp pro arg arg gln ser met
61/21                               91/31
ttg cag cag tta caa cgc caa atg gag tct gag cgc atc gtc gag ttc gat cag etc ggc
leu gln gln leu gln arg gln met gln ser glu arg ile val glu phe asp gln leu gly
121/41                               151/51
agg gga gac gtt ggc cag cga cgg atc caa cct get ggg cct ggc cct tgc aat cga cgg
arg gly asp val ala gln arg arg ile gln pro ala gly pro ala pro ser asn arg arg
181/61                               211/71
cca ggc cac cgc tgc ctg ccg gca aca aca cct gga atg ggg acc ttt tgc gtg ttg ctg
pro gly his arg ser leu pro ala thr thr pro gly met gly thr phe ser val leu leu
241/81                               271/91
gta acc ggg aca acc ggc acc acg cct cgg tgc aga cgt atc ggc gca ggc ttg gcc ctg
val thr gly thr thr gly thr thr pro arg ser arg arg ile ala ala ala leu ala leu
301/101                               331/111
tcg ttg ctg aca att acc get ggc cgc cgc ata ttt gct ggc ctg ccg cgg gcc gga tcc
ser leu leu thr ile thr ala gly arg arg ile phe ala ala leu pro arg ala gly ser
361/121                               391/131
agg tgc acc tgc cag atc tca ccg cgc agc atc tac gcc gtt cgc tgc aaa ccg ccg act
arg ser thr cys gln ile ser pro arg ser ile tyr ala val arg cys lys pro pro thr
421/141                               451/151
ggc acg gca ggc cca etc tct tgg caa ggc tcc aat gct ggc acg tcc tgc gta gac aag
ala thr ala gly pro leu ser trp his ala ser asn ala ala thr ser ser val asp lys
481/161                               511/171
etc acg att ggc ttc atg ccg cag tcc tac cca tgt agt aac aga tag
leu thr leu gly phe met pro gln ser tyr pro cys ser asn arg AMB

```

SEQ ID N° 34F

FIGURE 34F

```

1/1                               31/11
CAG TCT GTC GGC AAG GAG GGA CGC ATG CCA CTC TCC GAT CAT GAG CAG CCG ATG CTT GAC
gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg met leu asp
61/21                               91/31
CAG ATC GAG AGC GCT CTC TAC GCC GAA GAT CCC AAG TTC CCA TCG AGT GTC CGT GGC GCG
gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val arg gly gly
121/41                               151/51
GGC TTC CCG GCA CCG ACC GCG CCG CCG CCG CTC CAG GCG GCG GCG TTC TTC ATC ATC CGT
gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe ile ile gly
181/61                               211/71
CTG GGG ATG TTG GTT TCC GCG CTC GCG TTC AAA GAG ACC ATG ATC GGA AGT TTC CCG ATA
leu gly met leu val ser gly val ala phe lys glu thr met ile gly ser phe pro ile
241/81                               271/91
CTC AGC GTT TTC GGT TTT GTC CTG ATG TTC GGT GGT GTG GTG TAT GGC ATC ACC GGT CCT
leu ser val phe gly phe val val met phe gly gly val val tyr ala ile thr gly pro
301/101                               331/111
CGG TTG TCC GGC AGG ATG GAT CGT GGC GGA TCG GCT GCT GGG GCT TCG CCG CAG CGT COT
arg leu ser gly arg met asp arg gly gly ser ala ala gly ala ser arg gln arg arg
361/121                               391/131
ACC AAG GGG GCG GGG GCG TCA TTC ACC AGC CGT ATG GAA GAT C
thr lys gly ala gly gly ser phe thr ser arg met glu asp

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SEQ ID N° 35A

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 35A

107/185

1/1 31/11  
 GAC AGT CTG TCG GCA AGG AGG GAC GCA TCG CAC TCT CCG ATC ATG AGC AGC GGA TGC TTG  
 asp ser leu ser ala arg arg asp ala cys his ser pro ile met ser ser gly cys leu  
 61/21 91/31  
 ACC AGA TCG AGA GCG CTC TCT ACC CCG AAG ATC CCA AGT TCG CAT CGA GTG TCC GTG CCG  
 thr arg ser arg ala leu ser thr pro lys ile pro ser ser his arg val ser val ala  
 121/41 151/51  
 GGG GGT TCC GCG CAC CGA CCG CCG GCG GCG GCG TCC AGG GCG CCG CGT TGT TCA TCA TCG  
 gly ala ser ala his arg pro arg gly gly ala cys arg ala arg arg cys ser ser ser  
 181/61 211/71  
 GTC TCG GGA TGT TGG TTT CCG CCG TGG CGT TCA AAG AGA CCA TGA TCG GAA GTT TCC CGA  
 val trp gly cys trp phe pro ala trp arg ser lys arg pro OPA ser glu val ser arg  
 241/81 271/91  
 TAC TCA GCG TTT TCG GTT TTG TCG TGA TGT TCG GTG GTG TGG TGT ATG CCA TCA CCG GTC  
 tyr ser ala phe ser val leu ser OPA cys ser val val trp cys met pro ser pro val  
 301/101 331/111  
 CTC GGT TGT CCG GCA GGA TGG ATC GTG GCG GAT CCG CTG CTG GGG CTT CGC GCC AGC CTC  
 leu gly cys pro ala gly trp ile val ala asp arg leu leu gly leu arg ala ser val  
 361/121 391/131  
 GTA CCA AGG GCG CCG GCG GGT CAT TCA CCA GCG GTA TCG AAG ATC  
 val pro arg gly pro gly ala his ser pro ala val trp lys ile

SEQ ID N° 35B

FIGURE 35B

1/1 31/11  
 ACA GTC TGT CCG CAA GGA GGG ACC CAT GCG ACT CTC CGA TCA TGA GCA GCG GAT GGT TGA  
 thr val cys arg gln gly gly thr his ala thr leu arg ser OPA ala ala asp ala OPA  
 61/21 91/31  
 CCA GAT CGA GAG CCG TCT CTA CCG CGA AGA TCC CAA GTT CCG ATC GAG TGT CCG TCG CCG  
 pro asp arg glu arg ser leu arg arg arg ser gln val arg ile glu cys pro trp arg  
 121/41 151/51  
 GGG GTT CCG CCG ACC GAC CCG CCG GCG GCG CCG GCA GCG CCG GCG GTT GTT CAT CAT CCG  
 gly leu pro arg thr asp arg ala ala ala pro ala gly arg gly val val his his arg  
 181/61 211/71  
 TCT GGG GAT GTT GGT TTC CCG CCG GCG GTT CAA AGA GAC CAT GAT CCG AAG TTT CCC GAT  
 ser gly asp val gly phe arg arg gly val gln arg asp his asp arg lys phe pro asp  
 241/81 271/91  
 ACT CAG CGT TTT CCG TTT TGT CCG GAT GTT CCG TCG TGT GGT GTA TCG CAT CAC CCG TCC  
 thr gln arg phe arg phe cys arg asp val arg trp cys gly val cys his his arg ser  
 301/101 331/111  
 TCG GTT GTC CCG CAG GAT GGA TCG TCG CCG ATC GCG TCG TCG GCG TTC GCG CCA GCG TCG  
 ser val val arg gln asp gly ser trp arg ile gly cys trp gly phe ala pro ala ser  
 361/121 391/131  
 TAC CAA GCG GCG CCG GCG CTC ATT CAC CAG CCG TAT GGA AGA TC  
 tyr gln gly gly arg gly leu ile his gln pro tyr gly arg

SEQ ID N° 35C

FIGURE 35C

FEUILLE DE REMPLACEMENT (REGLE 26)

108/185

séquence Rv2169c prédite par Cole et al. (Nature 393:537-544) et contenant partiellement seq35A

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1/1                               31/11
atg cca ctc tcc gat cat gag cag cgg atg ctc gac cag atc gag agc gct ctc tac gcc
Met pro leu ser asp his glu gln arg met leu asp gln ile glu ser ala leu tyr ala
61/21                               31/31
gaa gat ccc aag ttc gca tgg agt gtc cgt ggc ggg ggc ttc cgc gca cgg acc ggc cgg
glu asp pro lys phe ala ser ser val arg gly gly gly phe arg ala pro thr ala arg
121/41                               131/51
cgg cgc ctg cag ggc ggc ggc ttg ttc atc atc ggt ctg ggg atg ttg gtt tcc ggc gtg
arg arg leu gln gly ala ala leu phe ile ile gly leu gly met leu val ser gly val
181/61                               211/71
ggg ttc aaa gag acc atg atc gga agt ttc cgg ata ctc agc gtt ttc ggt ttt gtc gtg
ala phe lys glu thr met ile gly ser phe pro ile leu ser val phe gly phe val val
241/81                               271/91
atg ttc ggt ggt gtc gtg tat gcc atc acc ggt cct cgg ctg tcc ggc agg atg gat cgt
met phe gly gly val val tyr ala ile thr gly pro arg leu ser gly arg met asp arg
301/101                               331/111
ggc gga tgg gct gct ggg gct tgg cgg cag cgt cgt acc aag ggg gcc ggg ggc tca ttc
gly gly ser ala ala gly ala ser arg gln arg arg thr lys gly ala gly gly ser phe
361/121                               391/131
acc agc cgt atg gaa gat cgg ttc cgg cgc cgc ttc gac gag taa
thr ser arg met glu asp arg phe arg arg arg phe asp glu OCH

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SEQ ID N° 35D

FIGURE 35D

ORF d'après Cole et al. (Nature 393:537-544) et contenant Rv2169c

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1/1                               31/11
tga cag tct gtc ggc aag gag gga cgc atg cca ctc tcc gat cat gag cag cgg atg ctt
ORF gln ser val gly lys glu gly arg met pro leu ser asp his glu gln arg met leu
61/21                               91/31
gac cag atc gag agc gct ctc tac gcc gaa gat ccc aag ttc gca tgg agt gtc cgt ggc
asp gln ile glu ser ala leu tyr ala glu asp pro lys phe ala ser ser val arg gly
121/41                               151/51
ggg ggc ttc cgc gca cgg acc ggc cgg cgg cgc ctg cag ggc ggc ggc ttg ttc atc atc
gly gly phe arg ala pro thr ala arg arg arg leu gln gly ala ala leu phe ile ile
181/61                               211/71
ggt ctg ggg atg ttg gtt tcc ggc gtg ggc ttc aaa gag acc atg atc gga agt ttc cgg
gly leu gly met leu val ser gly val ala phe lys glu thr met ile gly ser phe pro
241/81                               271/91
ata ctc agc gtt ttc ggt ttt gtc gtg atg ttc ggt ggt gtc gtg tat gcc atc acc ggt
ile leu ser val phe gly phe val val met phe gly gly val val tyr ala ile thr gly
301/101                               331/111
cct cgg ttg tcc ggc agg atg gat cgt ggc gga tgg gct gct ggg gct tgg cgc cag cgt
pro arg leu ser gly arg met asp arg gly gly ser ala ala gly ala ser arg gln arg
361/121                               391/131
cgt acc aag ggg gcc ggg ggc tca ttc acc agc cgt atg gaa gat cgg ttc cgg cgc cgc
arg thr lys gly ala gly gly ser phe thr ser arg met glu asp arg phe arg arg arg
421/141
ttc gac gag taa
phe asp glu OCH

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SEQ ID 35F

FEUILLE DE REMPLACEMENT (REGLE 26)

FIGURE 35F



109/185

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1/1                               31/11
GAC CTG GGA CGA AGA CGA CGG CAG CAG CCG CAA TCA GAT CTA CCC GGT CCT GGT CAA CGT
asp leu gly arg arg arg arg gln gln pro gln ser asp leu pro gly pro gly gln arg
61/21                               91/31
CAA TGG ACA CCC GAC TAC GGT GCG CCT GCG CCG CTC GAC AAT GCG CCG TTC CTG TTG CCC
gln trp thr pro asp tyr gly ala pro ala arg leu asp asn ala arg phe leu leu pro
121/41                               151/51
GTG GTC GGA GTG CCA CCC GAC CAG GCC ACC GAC TTC GGC TCC GGT GTT GCA CCA GAA ACG
val val gly val pro pro asp gln ala thr asp phe gly ser ala val ala pro glu thr
181/61                               211/71
ACG GCG CCG GTC TGG ATC ACC ATG CTG TGG CCG CTG GCC GAC CCG CCC CCG TTG SCC CCC
thr ala pro val trp ile thr met leu trp pro leu ala asp arg pro arg leu ala pro
241/81                               271/91
GGG GCA CCC GGT GGC ACC GTT CCC GTC CCG CTG GTC GAC GAC GAC CTG GCA AAC TCG CTG
gly ala pro gly gly thr val pro val arg leu val asp asp asp leu ala asn ser leu
301/101                               331/111
GCC AAC GGC GGC CCG CTG GAC ATC CTC CTG TCG GCG GCC GAG TTC GCC ACC AAC CCG GAA
ala asn gly gly arg leu asp ile leu leu ser ala ala glu phe ala thr asn arg glu
361/121                               391/131
GTC GAC CCC GAC GGC GGC GTC GGC CCA GCG CTG TGC CTG GCC ATC GAC CCA GAT C
val asp pro asp gly ala val gly arg ala leu cys leu ala ile asp pro asp

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SEQ ID N° 36A

FIGURE 36A

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1/1                               31/11
ACC TGG GAC GAA GAC GAC GGC AGC AGC CCG AAT CAG ATC TAC CCG CTC CTG CTC AAC GTC
thr trp asp glu asp asp gly ser ser arg asn gln ile tyr pro val leu val asn val
61/21                               91/31
AAT GGA CAC CCG ACT ACG GTG CCG CTG CCG GCG TCG ACA ATG CCG GGT TCC TGT TGC CCG
asn gly his pro thr thr val arg leu arg gly ser thr met arg gly ser cys cys pro
121/41                               151/51
TGG TCG GAG TGC CAC CCG ACC AGG CCA CCG ACT TCG GCT CCG CTG TTG CAC CAG AAA CGA
trp ser glu cys his pro thr arg pro pro thr ser ala pro leu leu his gln lys arg
181/61                               211/71
CGG CCG CCG TCT GGA TCA CCA TGC TGT GCG CCG TGG CCG ACC GCG CCC GGT TGG CCC CCG
arg arg arg ser gly ser pro cys cys gly arg trp pro thr gly pro gly trp pro pro
241/81                               271/91
GGG CAC CCG GTG GCA CCG TTC CCG TCC GCG TGG TCG ACC ACC ACC TGG CAA ACT CCG TGG
gly his pro val ala pro phe pro ser gly trp ser thr thr thr trp gln thr arg trp
301/101                               331/111
CCA ACG GCG GCG GCG TGG ACA TCC TCC TGT CCG CCG CCG AGT TCG CCA CCA ACC GCG AAG
pro thr ala ala gly trp thr ser ser cys arg arg pro ser ser pro pro thr gly lys
361/121                               391/131
TCG ACC CCG ACG GCG CCG TCG GCC GAG CCG TGT GCC TGG CCA TCG ACC CAG ATC
ser thr pro thr ala pro ser ala glu arg cys ala trp pro ser thr glo ile

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SEQ ID N° 36B

FEUILLE DE REMPLACEMENT (REGLE 26)

110/185

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1/1                               31/11
CCT GGG ACG AAG ACG ACG GCA GCA GCC GCA ATC AGA TCT ACC CGG TCC TGG TCA ACG TCA
pro gly thr lys thr thr ala ala ala ala ile arg ser thr arg ser trp ser thr ser
61/21                               91/31
ATG GAC ACC CGA CTA CGG TGC GCT TGC GCG GCT CGA CAA TGC GCG GTT CCT GTT GCC CDT
met asp thr arg leu arg cys ala cys ala ala arg gln cys ala val pro val ala arg
121/41                               151/51
GGT CGG AGT GCC ACC CGA CCA GGC CAC CGA CTT CGG CTC GCG TGT TGC ACC AGA AAC GAC
gly arg ser ala thr arg pro gly his arg leu arg leu arg cys cys thr arg asp asp
181/61                               211/71
GGC GCC GGT CTG GAT CAC CAT GCT GTG GCC GCT GCG CGA CCG GCC CCG GTT GGC CCC CGG
gly ala gly leu asp his his ala val ala ala gly arg pro ala pro val gly pro arg
241/81                               271/91
GGC ACC CGG TGG CAC CGT TCC CGT CCG GCT GGT CGA CGA CGA CCT GGC AAA CTC GCT GGC
gly thr arg trp his arg ser arg pro ala gly arg arg arg pro gly lys leu ala gly
301/101                               331/111
CAA CGG CGG CCG GCT GGA CAT CCT CCT GTC GGC GCG CGA GTT CCG CAC CAA CCG GGA AGT
gln arg arg pro ala gly his pro pro val gly gly arg val arg his gln pro gly ser
361/121                               391/131
CGA CCC CGA CGG CCG CDT CCG CCG AGC GCT GTG CCT GCG CAT CGA CCC AGA TC
arg pro arg arg arg arg arg pro ser ala val pro gly his arg pro arg

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SEQ ID N° 36 C

FIGURE 36C

Séquence codante Rv3909 prédite par Cole et al., 1998 (Nature 393 537-544) contenant Seq 36A

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1/1                               31/11
GTG ACC GCA CTG CAA CTC GGC TGG GCC GCT TTG GCG GCG GTC ACC TCA GCG ATC GGC CTC
met thr ala leu gln leu gly trp ala ala leu ala arg val thr ser ala ile gly val
61/21                               91/31
GTG GCG GGC CTC GGG ATG GCG CTC ACG GTA CCG TCG GCG GCA CCG CAC GCG CTC GCA GCG
val ala gly leu gly met ala leu thr val pro ser ala ala pro his ala leu ala gly
121/41                               151/51
GAG CCC ACC CCG ACC CCT TTT GTC CAG GTC CCG ATC GAT CAG GTG ACC CCG GAC GTC GTC
glu pro ser pro thr pro phe val gln val arg ile asp gln val thr pro asp val val
181/61                               211/71
ACC ACT TCC ACC GAA CCG CAT GTC ACC CTC AGC GGA ACC GTG ACC AAT ACC GGT GAC CCG
thr thr ser ser gln pro his val thr val ser gly thr val thr asn thr gly asp arg
241/81                               271/91
CCA GTC CCG GAT GTG ATG GTC CCG CTT GAG CAC GCG GCG GCG GTC ACC TCG TCA ACC GCG
pro val arg asp val met val arg leu glu his ala ala ala val thr ser ser thr ala
301/101                               331/111
TTA CGC ACC TCG CTC GAC GCG GCG ACC GAC CAG TAC CAG CCG GCG GCG GAC TTC CTC ACC
leu arg thr ser leu asp gly gly thr asp gln tyr gln pro ala ala asp phe leu thr

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SEQ ID N° 36D

FIGURE 36D

FEUILLE DE REMPLACEMENT (REGLE 26)

111/185

361/121  
 GTC GGC CCC GAA CTA GAC GGC GGG CAA GAG GCC GGC TTT ACC CTC TCG GCC CCG CTG CCG  
 val ala pro glu leu asp arg gly gln gla ala gly phe thr leu ser ala pro leu arg  
 421/141  
 TCG CTG ACC AGG CCC TCG TTG GGC GTC AAC CAG CCC GGG ATC TAC CCG GTC CTG GTC AAC  
 ser leu thr arg pro ser leu ala val asn gln pro gly ile tyr pro val leu val asn  
 481/161  
 GTC AAT GGG ACA CCC GAC TAC GGT GCG CCT GCG CCG CTC GAC AAT CCG CCG TTC CTG TTG  
 val asn gly thr pro asp tyr gly ala pro ala arg leu asp asn ala arg phe leu leu  
 541/181  
 CCC GTG GTC GGA GTG CCA CCC GAC CAG GCC ACC GAC TTC GGC TCC GCT GTT GCA CCA GAA  
 pro val val gly val pro pro asp gln ala thr asp phe gly ser ala val ala pro glu  
 601/201  
 ACC ACG GCG CCG GTC TGG ATC ACC ATG CTG TGG CCG CTG GCC GAC CCG CCC CCG TTG GCC  
 thr thr ala pro val trp ile thr met leu trp pro leu ala asp arg pro arg leu ala  
 661/221  
 CCC GGG GCA CCC GGT GGC ACC GTT CCC GTC CCG CTG GTC GAC GAC GAC CTC GCA AAC TCG  
 pro gly ala pro gly gly thr val pro val arg leu val asp asp asp leu ala asn ser  
 721/241  
 CTG GCC AAC GGC GGC CCG CTG GAC ATC CTC CTG TCG GCG GCC GAG TTC GCC ACC AAC CCG  
 leu ala asn gly gly arg leu asp ile leu leu ser ala ala glu phe ala thr asn arg  
 781/261  
 GAA GTC GAC CCC GAC GGC GCC GTC GGC CGA GCG CTG TCG CTC GGC ATC GAC CCA GAT CTA  
 glu val asp pro asp gly ala val gly arg ala leu cys leu ala ile asp pro asp leu  
 841/281  
 CTC ATC ACC CTC AAT GCG ATG ACC GGC GGC TAC GTC GTC TCC GAC TCG CCC GAC GCG GCC  
 leu ile thr val asn ala met thr gly gly tyr val val ser asp ser pro asp gly ala  
 901/301  
 GCT CAA CTA CCG GGC ACC CCG ACC CAC CCG GGC ACC GGC CAG GCC GCC GCA TCC AGC TGG  
 ala gln leu pro gly thr pro thr his pro gly thr gly gln ala ala ala ser ser trp  
 961/321  
 CTG GAT CGA TTG CCG ACG CTA GTC CAC CCG ACA TCG GTG ACG CCG CTG CCT TTT GCC CAA  
 leu asp arg leu arg thr leu val his arg thr cys val thr pro leu pro phe ala gln  
 1021/341  
 GCC GAC CTG GAT GGT TTG CAG CCG GTT AAT GAT CCG AGG CTG AGC CCG ATC GCA ACC ATC  
 ala asp leu asp ala leu gln arg val asn asp pro arg leu ser ala ile ala thr ile  
 1081/361  
 AGC CCC GCC GAC ATC GTC GAC CCG ATC CTG GAT GTC ACC TCC ACC CCG GGC GCA ACC GTG  
 ser pro ala asp ile val asp arg ile leu asp val ser ser thr arg gly ala thr val  
 1141/381  
 CTG CCC GAC GGC CCG TTG ACC GGC CCG GCG ATC AAC TTG CTC AGC ACC CAC GGC AAC ACG  
 leu pro asp gly pro leu thr gly arg ala ile asn leu leu ser thr his gly asn thr  
 1201/401  
 GTT GCC GTC GCG GCC GGC GAT TTT AGC CCC GAG GAA CAG CAG GGT TCG TCC CAG ATC GGC  
 val ala val ala ala asp phe ser pro glu glu gln gln gly ser ser gln ile gly  
 1261/421  
 TCC GCG CTC TTA CCC GGT ACC GCG CCC CCG CCG TTG TCC CCG CCG GTG GTA GCG GCG CCG  
 ser ala leu leu pro ala thr ala pro arg arg leu ser pro arg val val ala ala pro  
 1321/441  
 TTT GAT CCC GCG GTC GGG GCC CCG CTG GCC GCG GCG GCA ACA AAC CCG ACC GTT CCT ACC  
 phe asp pro ala val gly ala ala leu ala ala ala gly thr asn pro thr val pro thr  
 1381/461  
 TAT CTA GAT CCC TCG TTG TTC GTT CCG ATC GCG CAT GAA TCG ATC ACC GCG CCG CCG CAG  
 tyr leu asp pro ser leu phe val arg ile ala his glu ser ile thr ala arg arg gln

SEQ ID N° 36D(suite 1)

FEUILLE DE REMPLACEMENT (RÈGLE 26)

112/185

1441/481  
 GAC GCC TTG GGC GCA ATG CTG TCG CCC ACC TTG GAG CCG AAT GCC GCG CCC CGT ACC CAA  
 asp ala leu gly ala met leu trp arg ser leu glu pro asn ala ala pro arg thr gln  
 1501/501  
 ATC CTG GTG CCG CCG GCG TCG TCG AGC CTG GCC AGC GAC GAC GCG CAG GTC ATC CTG ACC  
 ile leu val pro pro ala ser trp ser leu ala ser asp asp ala gln val ile leu thr  
 1561/521  
 GCG CTG GCC ACC GCC ATC CCG TCT GGC CTG GCC GTG CCG CGA CCA CTA CCG GCG CTG ATC  
 ala leu ala thr ala ile arg ser gly leu ala val pro arg pro leu pro ala val ile  
 1621/541  
 GGT GAC GCC GCG GCG CCG ACC GAG CCA CCG GAA CCC CCG GCG GCT TAC AGC GCC GCT CCG  
 ala asp ala ala ala arg thr glu pro pro gla pro pro gly ala tyr ser ala ala arg  
 1681/561  
 GGC CCG TTC AAT GAC GAC ATC ACC ACG CAG ATC GCG GCG CAG CTT GCC CCG CTA TCG AAG  
 gly arg phe asn asp asp ile thr thr gln ile gly gly gln val ala arg leu trp lys  
 1741/581  
 CTG ACC TCG GCG TTG ACC ATC GAT GAC CCG ACC GCG CTG ACC GCG CTG CAG TAC ACC GCA  
 leu thr ser ala leu thr ile asp asp arg thr gly leu thr gly val gln tyr thr ala  
 1801/601  
 CCA CTA CCG GAG GAC ATG TTG CCG GCG CTG AGC CAA TCG CTA CCA CCC GAT ACC CCG AAC  
 pro leu arg glu asp met leu arg ala leu ser gln ser leu pro pro asp thr arg asn  
 1861/621  
 GGG CTG GCC CAG CAG CCG CTG GCC GTC GTT GGA AAG ACG ATC GAC GAT CTT TTC GCG GCG  
 gly leu ala gln gln arg leu ala val val gly lys thr ile asp asp leu phe gly ala  
 1921/641  
 GTG ACC ATC GTC AAC CCG GCG GCG TCG TAC ACT CTG GCG ACC GAG CAC AGT CCG CTG CCG  
 val thr ile val asn pro gly gly ser tyr thr leu ala thr glu his ser pro leu pro  
 1981/661  
 TTG CCG CTG CAT AAT GCC CTC GCG GTG CCA ATC CCG GTC CCG CTA CAG GTC GAT GCT CCG  
 leu ala leu his asn gly leu ala val pro ile arg val arg leu gln val asp ala pro  
 2041/681  
 CCC GCG ATG ACG GTG GCC GAT GTC GGT CAG ATC GAG CTA CCG CCC GCG TAC CTG CCG CTA  
 pro gly met thr val ala asp val gly gln ile glu leu pro pro gly tyr leu pro leu  
 2101/701  
 CGA GTA CCA ATC GAG GTG AAC TTC ACA CAG CCG GTT GCC GTC GAC GTG TCG CTG CCG ACC  
 arg val pro ile glu val asn phe thr gln arg val ala val asp val ser leu arg thr  
 2161/721  
 CCC GAC GCG GTC CCG CTG GGT GAA CCG GTG CCG TTG TCG GTG CAC TCC AAC GCG TAC GCG  
 pro asp gly val ala leu gly glu pro val arg leu ser val his ser asn ala tyr gly  
 2221/741  
 AAG GTG TTG TTC GCG ATC ACG CTA TCG GGT GCG GCC GTG CTG CTA ACG CTG GCG GCG CCG  
 lys val leu phe ala ile thr leu ser ala ala ala val leu val thr leu ala gly arg  
 2281/761  
 CSC CTT TCG CAC CCG TTC CGT GCG CAG CCT GAT CCG GCC GAC CTG CAT CCG CCC GAC CTG  
 arg leu trp his arg phe arg gly gln pro asp arg ala asp leu asp arg pro asp leu  
 2341/781  
 CCT ACC GCG AAA CAC GCG CCG CAG CCG CGT GCC GTA GCC AGT CCG GAT GAC GAA AAG CAC  
 pro thr gly lys his ala pro gln arg arg ala val ala ser arg asp asp glu lys his  
 2401/801  
 CCG GTA TGA  
 arg val opa

SEQ ID N° 36D (suite 2)

FIGURE 36D (suite 2)

FEUILLE DE REMPLACEMENT (REGLE 26)

113/185

ORF d'après Cole et al., 1998 (Nature 393 537-544) et contenant Rv 3909.

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1/1                               31/11
TGA CTC AGC ACC GGG TCA GCA CAA CGG TCC CGG GCC GGG GCC GTG ACC GCA CTG CAA CTC
OPA leu ser thr gly ser ala gln arg ser arg ala gly ala val thr ala leu gln leu
61/21                               91/31
GGC TGG GCC GCT TTG GCG CGC GTC ACC TCA GCG ATC GGC GTC GTG GCC GGC CTC GGG ATG
gly trp ala ala leu ala arg val thr ser ala ile gly val val ala gly leu gly met
121/41                               151/51
GCG CTC ACG GTA CCG TCG GCG GCA CCG CAC GCG CTC GCA GCG GAG CCC AGC CCG ACG CCT
ala leu thr val pro ser ala ala pro his ala leu ala gly glu pro ser pro thr pro
181/61                               211/71
TTT GTC CAG GTC CGC ATC GAT CAG GTG ACC CGG GAC GTG GTC ACC ACT TCC AGC GAA CCC
phe val gln val arg ile asp gln val thr pro asp val val thr thr ser ser glu pro
241/81                               271/91
CAT GTC ACC GTC AGC GGA ACG GTG ACC AAT ACC GGT GAC CGC CCA GTC CGC GAT GTG ATG
his val thr val ser gly thr val thr asn thr gly asp arg pro val arg asp val met
301/101                               331/111
GTC CGG CTT GAG CAC GCC GCC GCG GTC ACC TCG TCA ACG GCG TTA CGC ACC TCG CTC GAC
val arg leu glu his ala ala ala val thr ser ser thr ala leu arg thr ser leu asp
361/121                               391/131
GGC GGC ACC GAC CAG TAC CAG CCG GCC CGG GAC TTC CTC ACC GTC GCC CCC GAA CTA GAC
gly gly thr asp gln tyr gln pro ala ala asp phe leu thr val ala pro glu leu asp
421/141                               451/151
CGC GGG CAA CAG GCC GGC TTT ACC CTC TCG GCC CGG CTG CGC TCG CTG ACC AGG CGG TCG
arg gly gln glu ala gly phe thr leu ser ala pro leu arg ser leu thr arg pro ser
481/161                               511/171
TTG GCC GTC AAC CAG CCC GGG ATC TAC CCG GTC CTC GTC AAC GTC AAT GGG ACA CCC GAC
leu ala val asn gln pro gly ile tyr pro val leu val asn val asn gly thr pro asp
541/181                               571/191
TAC GGT GCG CCT GCG CGG CTC GAC AAT GCG CGG TTC CTG TTG CCC GTG GTC GGA GTG CCA
tyr gly ala pro ala arg leu asp asp ala arg phe leu leu pro val val gly val pro
601/201                               631/211
CCC GAC CAG GCC ACC GAC TTC GCG TCC GCT GTT GCA CCA GAA ACG ACG GCG CGG GTC TGG
pro asp glu ala thr asp phe gly ser ala val ala pro glu thr thr ala pro val trp
661/221                               691/231
ATC ACC ATG CTG TGG CCG CTG GCC GAC CGG CCC CGG TTG GCC CCC GGG GCA CCC GGT GGC
ile thr met leu trp pro leu ala asp arg pro arg leu ala pro gly ala pro gly gly
721/241                               751/251
ACC GTT CCC GTC CGG CTG GTC GAC CAC GAC CTG GCA AAC TCG CTG GCC AAC GGC GGC CGG
thr val pro val arg leu val asp asp asp leu ala asn ser leu ala asn gly gly arg
781/261                               811/271
CTG GAC ATC CTC CTG TCG GCG GCC GAG TTC GGC ACC AAC CGG GAA GTC GAC CCC GAC GGC
leu asp ile leu leu ser ala ala glu phe ala thr asn arg glu val asp pro asp gly
841/281                               871/291
GCC GTC GGC CGA GCG CTG TGC CTG GCC ATC GAC CUA GAT CTA CTC ATC ACC GTC AAT GCG
ala val gly arg ala leu cys leu ala ile asp pro asp leu leu ile thr val asn ala
901/301                               931/311
ATG ACC GGC GGC TAC GTC GTG TCC GAC TCG CCC GAC GCG GCG GCT CAA CTA CCG GGC ACC
met thr gly gly tyr val val ser asp ser pro asp gly ala ala gln leu pro gly thr
961/321                               991/331
CGG ACC CAC CCG GGC ACC GGC CAG GCC GCC GCA TCC AGC TCG CTG GAT CCA TTC CGG ACC
pro thr his pro gly thr gly gln ala ala ala ser ser trp leu asp arg leu arg thr

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SEQ ID N° 36F

FEUILLE DE REMPLACEMENT (REGLE 26)

114/185

1021/341 1051/351  
 CTA GTC CAC CCG ACA TGC GTG ACG CCG CTG CCT TTT GCC CAA GCC GAC CTG GAT GCT TTG  
 leu val his arg thr cys val thr pro leu pro phe ala gln ala asp leu asp ala leu  
 1081/361 1111/371  
 CAG CCG GTT AAT GAT CCG AGG CTG AGC GCG ATC GCA ACC ATC AGC CCC GCC GAC ATC GTC  
 gln arg val asn asp pro arg leu ser ala ile ala thr ile ser pro ala asp ile val  
 1141/381 1171/391  
 GAC CCG ATC CTG GAT GTC AGC TCC ACC CCG GCG GCA ACC CTG CTG CCC GAC GGC CCG TTG  
 asp arg ile leu asp val ser ser thr arg gly ala thr val leu pro asp gly pro leu  
 1201/401 1231/411  
 ACC GCG CCG GCG ATC AAC TTG CTC AGC ACC CAC GCG AAC ACG GTT GCC GTC GCG GCC GCC  
 thr gly arg ala ile asn leu leu ser thr his gly asn thr val ala val ala ala ala  
 1261/421 1291/431  
 GAT TTT AGC CCC GAG GAA CAG CAG GGT TCG TCC CAG ATC GCG TCC GCG CTC TTA CCC GCT  
 asp phe ser pro gln glu gln gln gly ser ser gln ile gly ser ala leu leu pro ala  
 1321/441 1351/451  
 ACC GCG CCC CCG CCG TTG TCC CCG CCG GTG GTA GCG GCG CCG TTT GAT CCC GCG GTC GCG  
 thr ala pro arg arg leu ser pro arg val val ala ala pro phe asp pro ala val gly  
 1381/461 1411/471  
 GCG GCG CTG GCG GCG GCG GGA ACA AAC CCG ACC GTT CCT ACC TAT CTA GAT CCC TCG TTG  
 ala ala leu ala ala ala gly thr asn pro thr val pro thr tyr leu asp pro ser leu  
 1441/481 1471/491  
 TTC GTT CCG ATC GCG CAT GAA TCG ATC ACC GCG CCG CCG CAG GAC GCC TTG GCG GCA ATG  
 phe val arg ile ala his glu ser ile thr ala arg arg gln asp ala leu gly ala met  
 1501/501 1531/511  
 CTG TCG CCG AGC TTG GAG CCG AAT GCG GCG CCC CGT ACC CAA ATC CTG GTG CCG CCG GCG  
 leu trp arg ser leu glu pro asn ala ala pro arg thr gln ile leu val pro pro ala  
 1561/521 1591/531  
 TCG TCG AGC CTG GCC AGC GAC GAC GCG CAG CTC ATC CTG ACC GCG CTG GCG ACC GCG ATC  
 ser trp ser leu ala ser asp asp ala gln val ile leu thr ala leu ala thr ala ile  
 1621/541 1651/551  
 CCG TCT GCG CTG GCC GTG CCG CGA CCA CTA CCG GCG CTG ATC GCT GAC GCG GCG GCG CCG  
 arg ser gly leu ala val pro arg pro leu pro ala val ile ala asp ala ala ala arg  
 1681/561 1711/571  
 ACC GAG CCA CCG GAA CCC CCG GCG GGT TAC ACC GCG GCT CCG GCG CCG TTC AAT GAC GAC  
 thr glu pro pro glu pro pro gly ala tyr ser ala ala arg gly arg phe asn asp asp  
 1741/581 1771/591  
 ATC ACC ACG CAG ATC GCG GCG CAG GTT GCG CCG CTA TCG AAG CTG ACC TCG GCG TTG ACC  
 ile thr thr gln ile gly gly gln val ala arg leu trp lys leu thr ser ala leu thr  
 1801/601 1831/611  
 ATC GAT GAC CCG ACC GCG CTG ACC GCG GTG CAG TAC ACC GCA CCA CTA CCG GAG GAC ATC  
 ile asp asp arg thr gly leu thr gly val gln tyr thr ala pro leu arg glu asp met  
 1861/621 1891/631  
 TTG CCG GCG CTG AGC CAA TCG CTA CCA CCC GAT ACC CCG AAC GCG CTG GCG CAG CAG CCG  
 leu arg ala leu ser gln ser leu pro pro asp thr arg asn gly leu ala gln gln arg  
 1921/641 1951/651  
 CTG GCG GTC GTT GGA AAG ACG ATC GAC GAT CTT TTE GCG GCG GTG ACC ATC GTC AAC CCG  
 leu ala val val gly lys thr ile asp asp leu phe gly ala val thr ile val asn pro  
 1981/661 2011/671  
 GCG GCG TCC TAC ACT CTG GCG ACC GAG CAC AGT CCG CTG CCG TTG GCG CTG CAT AAT GCG  
 gly gly ser tyr thr leu ala thr glu his ser pro leu pro leu ala leu his asn gly

SEQ ID 36F (suite 1)

FIGURE 36F (suite 1)

FEUILLE DE REMPLACEMENT (REGLE 26)

115/185

2041/681 2671/691  
 CTC GCC GTG CCA ATC CCG GTC CCG CTA CAG GTC GAT GGT CCG CCC GGG ATG ACG GTG GCC  
 leu ala val pro ile arg val arg leu gln val asp ala pro pro gly met thr val ala  
 2101/701 2131/711  
 GAT GTC GGT CAG ATC GAG CTA CCG CCC GGG TAC CTG CCG CTA CGA GTA CCA ATC GAG GTG  
 asp val gly gln ile glu leu pro pro gly tyr leu pro leu arg val pro ile glu val  
 2161/721 2191/731  
 AAC TTC ACA CAG CCG GTT GCC GTC GAC GTG TCG CTG CCG ACC CCC GAC GGC GTC CCG CTG  
 asn phe thr gln arg val ala val asp val ser leu arg thr pro asp gly val ala leu  
 2221/741 2251/751  
 GGT GAA CCG GTG CCG TTG TCG GTG CAC TCC AAC GCC TAC GGC AAG GTG TTG TTC GCG ATC  
 gly glu pro val arg leu ser val his ser asn ala tyr gly lys val leu phe ala ile  
 2281/761 2311/771  
 ACG CTA TCC GGT GCG GCC GTG CTG GTA ACG CTG GCG GCG CCG CCG CTT TGG CAC CCG TTC  
 thr leu ser ala ala ala val leu val thr leu ala gly arg arg leu trp his arg phe  
 2341/781 2371/791  
 CGT GGC CAG CCT GAT CCG GCC GAC CTG GAT CGC CCC GAC CTG CCT ACC GGC AAA CAC GCC  
 arg gly gln pro asp arg ala asp leu asp arg pro asp leu pro thr gly lys his ala  
 2401/801 2431/811  
 CCG CAG CCG CCG GCC GTA GCC AGT CCG GAT GAC GAA AAG CAC CCG GTA TGA  
 pro gln arg arg ala val ala ser arg asp asp glu lys his arg val opa

SEQ ID 36F (suite 2)

FIGURE 36F (suite 2)

1/1 31/11  
 ATC CCG GCG TTG GCG TCG CAT CCG AAC ATC CTC GGA GTC AAG GAC GCC AAA GCG GAC CTG  
 ile arg ala leu ala ser his pro asn ile val gly val lys asp ala lys ala asp leu  
 61/21 91/31  
 CAC AGC GGC GCC CAA ATC ATG GCC GAC ACC GGA CTG GCC TAC TAT TCC GGC GAC GAC GCG  
 his ser gly ala gln ile met ala asp thr gly leu ala tyr tyr ser gly asp asp ala  
 121/41 151/51  
 CTC AAC CTG CCC TGG CTG GCC ATG GCG GCC ACG GCG TTC ATC AGC GTG ATT GCG CAC CTG  
 leu asn leu pro trp leu ala met gly ala thr gly phe ile ser val ile ala his leu  
 181/61 211/71  
 GCA GCC GCG CAG CTT CGA GAG TTG TTG TCC GCC TTC GGT TCT GCG GAT ATC GCC ACC GCC  
 ala ala gly gln leu arg glu leu leu ser ala phe gly ser gly asp ile ala thr ala  
 241/81  
 CCG AAG ATC  
 arg lys ile

SEQ ID N° 37A

FIGURE 37A

116/185

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1/1                               31/11
GAT CCG CCG GTT GGC GTC GCA TCC GAA CAT CGT CCG AGT CAA GGA CCG CAA AGC CGA CCT
asp pro arg val gly val ala ser glu his arg arg ser gln gly arg gln ser arg pro
61/21
GCA CAG CCG CCG CCA AAT CAT GGC CGA CAC CCG ACT GGC CTA CTA TTC CCG CGA CGA CCG
ala gln arg arg pro asn his gly arg his arg thr gly leu leu phe arg arg arg arg
121/41
GCT CAA CCT GGC CTG GCT GGC CAT GGG CCG CAC GGG CTT CAT CAG CGT GAT TGC CCA CCT
ala gln pro ala leu ala gly his gly arg his gly leu his gln arg asp cys pro pro
181/61
GGC AGC CCG GCA GCT TCG AGA GTT GTT GTC CCG CTT CCG TTC TGG GGA TAT CGC CAC CCG
gly ser arg ala ala ser arg val val val arg leu arg phe trp gly tyr arg his arg
241/81
CCG CAA GAT C
pro gln asp

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SEQ ID N° 37B

FIGURE 37B

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1/1                               31/11
TCC GCG CCG TGG CGT CCG ATC CGA ACA TCG TCG GAG TCA AGG ACG CCA AAG CCG ACC TCC
ser ala arg trp arg arg ile arg thr ser ser glu ser arg thr pro lys pro thr cys
61/21
ACA GCG GCG CCC AAA TCA TGG CCG ACA CCG GAC TGG CCT ACT ATT CCG GCG ACG ACG CCG
thr ala ala pro lys ser trp pro thr pro asp trp pro thr ile pro ala thr thr arg
121/41
TCA ACC TGC CCT GGC TGG CCA TGG GCG CCA CCG GCT TCA TCA GCG TGA TTC CCG ACC TGG
ser thr cys pro gly trp pro trp ala pro arg ala ser ser ala CAA leu pro thr trp
181/61
CAG CCG GGC AGC TTC GAG AGT TGT TGT CCG CCG TCG GTT CTG GGG ATA TCG CCA CCG CCC
gln pro gly ser phe glu ser cys cys pro pro ser val leu gly ile ser pro pro pro
241/81
GCA AGA TC
ala arg

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SEQ ID N° 37C

FIGURE 37C



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Séquence codante Rv2753c prédite par Cole et al., 1998 (Nature 383 537-544)  
contenant Seq 37A

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1/1                               31/11
GTG ACC ACC CTC GGA TTC GAC CTC GCA CCG CCG CTA GGA ACC CTC CTG ACC GCG ATG CTG
val thr thr val gly phe asp val ala ala arg leu gly thr leu leu thr ala met val
61/21
ACA CCG TTT ASC GGC GAT GGC TCC CTG GAC ACC GCG ACC GCG GCG CCG CTG GCC AAC CAC
thr pro phe ser gly asp gly ser leu asp thr ala thr ala ala arg leu ala asn his
121/41
CTG GTC GAT CAG GGG TGC GAC GGT CTG GTG GTC TCG GCG ACC ACC GCG GAG TCG CCG ACC
leu val asp gln gly cys asp gly leu val val ser gly thr thr gly glu ser pro thr
181/61
ACC ACC GAC GGG GAG AAA ATC GAG CTG CTG CCG GCC GTC TTG GAA CCG GTG GGG GAC CCG
thr thr asp gly glu lys ile glu leu leu arg ala val leu glu ala val gly asp arg
241/81
GCC CGT GTT ATC GCG GGT GCG GCG ACC TAT GAC ACC GCG CAC AGC ATC CCG CTG GCC AAG
ala arg val ile ala gly ala gly thr tyr asp thr ala his ser ile arg leu ala lys
301/101
GCT TGT CCG GCC GAG GGT GCG CAC GGG CTG CTG GTG GTC ACG CCC TAC TAT TCC AAG CCG
ala cys ala ala glu gly ala his gly leu leu val val thr pro tyr tyr ser lys pro
361/121
CCG CAG CCG GGG CTG CAA GCC CAT TTC ACC GCC GTC GCG GAC CCG ACC GAG CTG CCG ATG
pro gln arg gly leu gln ala his phe thr ala val ala asp ala thr glu leu pro met
421/141
CTG CTC TAT GAC ATC CCG GGG CCG TCG GCG GTC CCG ATC GAG CCC GAC ACG ATC CCG CCG
leu leu tyr asp ile pro gly arg ser ala val pro ile glu pro asp thr ile arg ala
481/161
TTG GCG TCG CAT CCG AAC ATC CTC GGA GTC AAG GAC GCG AAA GCG GAC CTG CAC AGC GCG
leu ala ser his pro asn ile val gly val lys asp ala lys ala asp leu his ser gly
541/181
GCC CAA ATC ATG GCG GAC ACC GGA CTG GCC TAC TAT TCC GCG GAC GAC GCG CTC AAC CTC
ala gln ile met ala asp thr gly leu ala tyr tyr ser gly asp asp ala leu asn leu
601/201
CCC TGG CTG GCG ATG GCG GCG ACC GCG TTC ATC ACC GTG ATT GCG CAC CTG GCA GCG CCG
pro trp leu ala met gly ala thr gly phe ile ser val ile ala his leu ala ala gly
661/221
CAG CTT CGA GAG TTG TTG TCC GCC TTC GGT TCT GCG GAT ATC GCG ACC GCG CCG AAG ATC
gln leu arg glu leu leu ser ala phe gly ser gly asp ile ala thr ala arg lys ile
721/241
AAC ATT CCG CTC GCC CCG CTG TGC AAC GCG ATG AGC CCG CTG GGT GCG GTG ACG TTG TCC
asn ile ala val ala pro leu cys asn ala met ser arg leu gly gly val thr leu ser
781/261
AAG GCG GCG TTG CCG CTG CAG GCG ATC GAC GTC GGT GAT CCC CCG CTG CCC CAG GTG GCC
lys ala gly leu arg leu gln gly ile asp val gly asp pro arg leu pro gln val ala
841/281
CGG ACA CCG GAG CAG ATC GAC CCG TTC GCG GCG GAC ATG CCG GCG GCG TCG CTG CTT CCG
ala thr pro glu gln ile asp ala leu ala ala asp met arg ala ala ser val leu arg
901/301
TGA
OPA

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SEQ ID N° 37D

FIGURE 37D

FEUILLE DE REMPLACEMENT (REGLE 26)

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ORF d'après Cole et al., 1998 (Nature 393 537-544) contenant Rv2753c

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1/1                               31/11
TAA GGT GAG CGC CGT GGC CGA GAC CGC GCC GCT CGG CGT GCA ACT GAT CGC CAA GAC CGA
OCH gly glu arg arg gly arg asp arg ala ala ala arg ala thr asp arg gln asp arg
61/21                               91/31
CTT CTT GGC CCC ACC CGA CGT GGC CTG GAC CAC CGA CGC CGA CGG CGG ACC CGC GCT GGT
leu leu gly pro thr arg arg ala leu asp his arg arg arg arg arg thr arg ala gly
121/41                               151/51
CGA GTT CGC CGG CGG GGC CTG CTA TCA GAG CTG CTC CAA GGC CAA TCC CAA GAC CGC CAC
arg val arg arg pro gly leu leu ser glu leu val gln ala gln ser gln asp arg his
181/61                               211/71
CAA CGC CGG CTA CCT CGG GCA CAT CAT CGA CGT CGG ACA TTT CTC GGT GCT AGA GCA TGC
gln arg arg leu pro pro ala his his arg arg arg thr phe leu gly ala arg ala cys
241/81                               271/91
CAG CGT GTC GTT CTA CAT CAC CGG GAT CTC CGG ATC GTG CAC CCA CGA GCT GAT CGC CCA
gln arg val val leu his his arg asp leu ala ile val his pro arg ala asp pro pro
301/101                               331/111
CCG GCA TTT CTC CTA CTC GCA GCT CTC CCA CGG CTA CGT ACC CCA GAA GGA CTC GCG GGT
pro ala phe leu leu leu ala ala leu pro ala leu arg thr arg glu gly leu ala gly
361/121                               391/131
CGT CGT GGC GGC CGG CAT GGA GGA CGA CGC CGA CCT GCG CCA CAT CCT GAC CGA GGC CGC
arg arg ala ala arg his gly gly arg arg arg pro ala pro his pro asp arg gly arg
421/141                               451/151
CGA CGC CGC CGG CGC CAC CTA CAG CGA GCT GCT GGC CAA GCT GGA AGC CAA GTT CGC CGA
arg arg arg pro arg his leu gln arg ala ala gly gln ala gly ser gln val arg arg
481/161                               511/171
CCA ACC CAA CGC GAT CCT GCG CCG CAA GCA GGC CGG CCA AGC CGC CGG CGG GGT GGT GGC
pro thr gln arg asp pro ala pro gln ala gly pro pro ser arg pro arg gly ala ala
541/181                               571/191
CAA CGC CAC CGA AAC CGG CAT CGT GGT GAC CGG CAA CTA CGG GGC CTG GCG GCA CTT CAT
gln arg his arg asn pro his arg gly asp arg gln leu pro gly leu ala ala leu his
601/201                               631/211
CGC AAT GCG GGC CAG CGA GCA CGC CGA CGT GGA AAT CGG GCG ACT GGC CAT CGA ATG CCT
arg ser ala gly gln arg ala arg arg arg gly asn pro ala thr gly his arg met pro
661/221                               691/231
GCG CCA GCT CGC CGC CGT GGC CCC CGC GGT GTT CGC CGA CTT CGA GGT GAC CAC CCT GGC
ala pro ala arg arg arg gly pro arg gly val arg arg leu arg gly asp his pro gly
721/241                               751/251
CGA CGG CAC CGA GGT GGC GAC CAG CCC GTT GGC GAC CGA ASC CTG AGG CGC CGT GTC GGT
arg arg his arg gly gly asp gln pro val gly asp arg ser leu arg arg arg val ala
781/261                               811/271
GCA CAA ACA CGC GCG CTC GCG GGC GGC ATA AAG CGC CAG GTA ACC TTG GGA GCC GTG ACC
gly gln thr arg ala leu ala ala gly ile lys arg gln val thr leu gly ala val thr
841/281                               871/291
ACC GTC GGA TTC GAC GTC GCA GCG CGC CTA GGA ACC CTG CTG ACC GCG ATG GTC ACA CGC
thr val gly phe asp val ala ala arg leu gly thr leu leu thr ala met val thr pro
901/301                               931/311
TTT ACC GGC GAT GGC TCC CTG GAC ACC GCG ACC GCG CGG CGG CTG GCG AAC CAC CTG GTC
phe ser gly asp gly ser leu asp thr ala thr ala ala arg leu ala asn his leu val
961/321                               991/331
GAT CAG GCG TGC GAC GGT CTG GTG GTC TCG GGC ACC ACC GCG GAG TCG CGG ACC ACC ACC
asp gln gly cys asp gly leu val val ser gly thr thr gly glu ser pro thr thr thr

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SEQ ID N° 37F

FIGURE 37F  
FEUILLE DE REMPLACEMENT (REGLE 26)

119/185

1021/341 1051/351  
 GAC GCG GAG AAA ATC GAG CTG CTG CCG GCC GTC TTG GAA GCG GTG GGG GAC CCG GCC CGT  
 asp gly gla lys ile glu leu leu arg ala val leu glu ala val gly asp arg ala arg  
 1081/361 1111/371  
 GTT ATC GCC GGT GCC GGC ACC TAT GAC ACC GCG CAC AGC ATC CCG CTG GCC AAG GCT TGT  
 val ile ala gly ala gly thr tyr asp thr ala his ser ile arg leu ala lys ala cys  
 1141/381 1171/391  
 GCG GCC GAG GGT GCG CAC GCG CTG CTG GTG GTC ACG CCC TAC TAT TCC AAG CCG CCG CAG  
 ala ala glu gly ala his gly leu leu val val thr pro tyr tyr ser lys pro pro gln  
 1201/401 1231/411  
 CCG GCG CTG CAA GCC CAT TTC ACC GCC GTC GCC GAC GCG ACC GAG CTG CCG ATG CTG CTC  
 arg gly leu gln ala his phe thr ala val ala asp ala thr glu leu pro met leu leu  
 1261/421 1291/431  
 TAT GAC ATC CCG GCG CCG TCG GCG GTG CCG ATC GAG CCC GAC ACG ATC CCG GCG TTG GCG  
 tyr asp ile pro gly arg ser ala val pro ile glu pro asp thr ile arg ala leu ala  
 1321/441 1351/451  
 TCG CAT CCG AAC ATC GTC GGA GTC AAG GAC GCC AAA GCC GAC CTG CAC AGC GGC GCC CAA  
 ser his pro asn ile val gly val lys asp ala lys ala asp leu his ser gly ala gln  
 1381/461 1411/471  
 ATC ATG GCC GAC ACC GGA CTG GCC TAC TAT TCC GCG GAC GAC GCG CTC AAC CTG CCC TCG  
 ile met ala asp thr gly leu ala tyr tyr ser gly asp asp ala leu asn leu pro trp  
 1441/481 1471/491  
 CTG GCC ATG GCC GCC ACG GCG TTC ATC AGC GTG ATT GCC CAC CTG GCA GCC GCG CAG CTT  
 leu ala met gly ala thr gly phe ile ser val ile ala his leu ala ala gly gla leu  
 1501/501 1531/511  
 CGA GAG TTG TTG TCC GCC TTC GGT TCT GCG GAT ATC GCC ACC GCC CCG AAG ATC AAC ATT  
 arg glu leu leu ser ala phe gly ser gly asp ile ala thr ala arg lys ile asn ile  
 1561/521 1591/531  
 GCG GTC GCC CCG CTG TCC AAC GCG ATG ACC CCG CTG GGT GCG GTG ACC TTG TCC AAG GCG  
 ala val ala pro leu cys asn ala met ser arg leu gly gly val thr leu ser lys ala  
 1621/541 1651/551  
 GGC TTG CCG CTG CAG GCG ATC GAC CTC GGT GAT CCC CCG CTG CCC CAG GTG GCC GCG ACA  
 gly leu arg leu gln gly ile asp val gly asp pro arg leu pro gln val ala ala thr  
 1681/561 1711/571  
 CCG GAG CAG ATC GAC GCG TTG GCC GCC GAC ATG CCG GCG GCC TCG CTG CTT CCG TGA  
 pro glu gln ile asp ala leu ala ala asp met arg ala ala ser val leu arg opa

SEQ ID N° 37F (suite 1)

FIGURE 37F (suite 1)

120/185

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1/1
GCG GTG AAC TGG TGG GCG CCG ATG GTT CAA GTA CCG GGT CGC AAA CTC GAG CAG AAC AGG
ala val asn trp trp ala arg met val gln val arg arg arg lys leu glu his asn arg
61/21
AGA CGA CCG ATG GAA GGA GAT GCT GGC GCC GGC CAG CTG AAC CCT GCC GAT GCG AAT AAG
arg arg arg met glu gly asp ala gly ala gly gln leu asn pro ala asp ala asn lys
121/41
TCG TCG TCT ACG GAG GTG AAG GCG GCG GAT TCG CCG GAA TCT GAC GCC CGA GCG GAC CAG
ser ser ser thr glu val lys ala ala asp ser ala glu ser asp ala gly ala asp gln
181/61
ACT GCG CCG CAG CTG AAG CCG GCG GAT TCG CCG GAA TCT GAC GCC CGA GAG CTC GCG GAG
thr gly pro gln val lys ala ala asp ser ala glu ser asp ala gly glu leu gly glu
241/81
GAC GCG TGC CCA GAA CAG GCC CTC GTC GAG CCG CCG CCG TCG CCG TTG CCG CGA GCG TGG
asp ala cys pro glu gln ala leu val glu arg arg pro ser arg leu arg arg gly trp
301/101
CTT GTT GCG ATT GCG GCG ACG CTG CTC GCG TTG CCG GGT GCG CTT GCG GCA GCG GGT TAT
leu val gly ile ala ala thr leu leu ala leu ala gly gly leu gly ala ala gly tyr
361/121
TTT CCG TTG CCG TCA CAC CAG GAA AGC CAA TCA ATC GCG CCG GAG GAC CTT GCG GCG ATT
phe ala leu arg ser his gln glu ser gln ser ile ala arg glu asp leu ala ala ile
421/141
GAG GCC GCT AAG GAT TGC GTT GCG GCC ACG CAG GCA CCG GAT GCT GCG GCG ATG TCG GTT
glu ala ala lys asp cys val ala ala thr gln ala pro asp ala gly ala met ser ala
481/161
AGC ATG CAG AAG ATC
ser met gln lys ile

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SEQ ID N° 38A

FIGURE 38A

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1/1
CAG CCG TGA ACT GGT GCG CCC GGA TGG TTC AAG TAC GCG GTC GCA AAC TGG AGC ACA ACA
gln arg GAA thr gly gly pro gly trp phe lys tyr ala val ala asn ser ser thr thr
61/21
GGA GAC GAC GGA TGG AAG GAG ATG CTG GCG CCG GCC AGC TGA ACC CTG CCG ATG CGA ATA
gly asp asp gly trp lys glu met leu ala pro ala ser GAA thr leu pro met arg ile
121/41
AGT CGT CGT CTA CCG AGC TGA AAG CCG CCG ATT CCG CCG GAT CTG ACC CCG GAG CCG AEC
ser arg arg leu arg arg GAA arg arg arg ile arg arg asn leu thr pro glu pro thr
181/61
AGA CTG GCC GCG AGG TGA AGG CCG CCG ATT CCG CCG AAT CTG ACC CCG GAG AGC TCG GCC
arg leu ala arg arg GAA arg arg arg ile arg arg asn leu thr pro glu ser ser ala
241/81
AGG ACG GGT GCC CAG AAC AGG CCC TCG TCG AGC GCG GCC CGT CCG GGT TCG GCG GAG GCT
arg thr arg ala gln asn arg pro ser ser ser gly ala arg arg gly cys gly glu ala
301/101
GCC TTG TTG GCA TTG CCG CGA CCG TCG TCG AGC GCG GCC CGT CCG GCG TTG GCG CAG CCG GTT
gly leu leu ala leu arg arg arg cys ser arg trp pro val ala leu ala gln arg val
361/121
ATT TTG GGT TCG GCT CAC ACC AAG AAA GCG AAT CAA TCG CCG CCG AAG ACC TTG CCG CCA
ile leu arg cys ala his thr arg lys ala asn gln ser arg ala arg thr leu arg pro
421/141
TTG AAG CCG CTA AAG ATT GCG TTG CCG CCA CCG AGC CAC CCG ATG CTG CCG CGA TGT CCG
leu arg pro leu arg ile ala leu arg pro arg arg his pro met leu gly arg cys arg
481/161
CTA CCA TGC AGA ACA TC
leu ala cys arg arg

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SEQ ID N° 38B

FEUILLE DE REMPLACEMENT (REGLE 26)

121/185

1/1 31/11  
 AGC GGT GAA CTG GTG GGC CCG GAT GGT TCA AGT ACG CCG TCG CAA ACT CGA GCA CAA CAG  
 ser gly glu leu val gly pro asp gly ser ser thr pro ser gln thr arg ala gln gln  
 61/21 91/31  
 GAG ACG ACG GAT GGA AGG AGA TGC TGG CCG CCG CCA GGT GAA CCC TGC CGA TGC GAA TAA  
 glu thr thr asp gly arg arg cys trp arg arg pro ala glu pro cys arg cys glu och  
 121/41 151/51  
 GTC GTC GTC TAC GGA GGT GAA GGC GGC GGA TTC GGC GGA ATC TGA CCG CCG AGC CGA CCA  
 val val val tyr gly gly glu gly gly gly phe gly gly ile opa arg arg ser arg pro  
 181/61 211/71  
 GAC TGG CCC GCA GGT GAA GGC GGC GGA TTC GGC GGA ATC TGA CCG CCG AGA GGT CCG CGA  
 asp trp pro ala gly glu gly gly gly phe gly gly ile opa arg arg arg ala arg arg  
 241/81 271/91  
 GGA CCG GTG CCC AGA ACA GGC CCT CCT CCA GCG CCG CCG GTC CCG GTT GCG GCG AGG CTG  
 gly arg val pro arg thr gly pro arg arg ala ala pro val ala val ala ala arg leu  
 301/101 331/111  
 GGT TGT TGG CAT TGC GGC GAC GGT GGT CCG GTT GCG CCG TGG CCT TGG CCG AGC GCG TTA  
 ala cys trp his cys gly asp ala ala arg val gly arg trp pro trp arg ser gly leu  
 361/121 391/121  
 TTT TGC GTT GCG CTC ACA CCA GGA AAG CCA ATC AAT CCG CCG CGA GGA CCT TGC GGC CAT  
 phe cys val ala leu thr pro gly lys pro ile ser arg ala arg gly pro cys gly his  
 421/141 451/151  
 TGA GGC CCG TAA GGA TTG CCT TGC GGC CAC CCA GGC ACC CGA TGC TGG GGC GAT GTC GGC  
 opa gly arg och gly leu arg cys gly his ala gly thr arg cys trp gly asp val gly  
 481/161  
 TAG CAT GCA GAA GAT C  
 AMB his ala glu asp

SEQ ID N° 38C

FIGURE 38C

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Séquence Rv0175 prédite par Cole et al., 1998 (Nature 393 537-544) et contenant seq38A

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1/1                               31/11
GTG AAG GCG GCG GAT TCG GCG GAA TCT GAC GCC GGA GCC GAC CAG ACT GGC CCG CAG GTG
val lys ala ala asp ser ala glu ser asp ala gly ala asp gln thr gly pro gln val
61/21                               91/31
AAG GCG GCG GAT TCG GCG GAA TCT GAC GCC GGA GAG CTC GCG GAG GAC GCG TCG CCA GAA
lys ala ala asp ser ala glu ser asp ala gly glu leu gly glu asp ala cys pro glu
121/41                               151/51
CAG GCC CTC CTC GAG CCG CCG CCG TCG CCG TTG CCG CGA GCG TGG CTT GTT GGC ATT GCG
gln ala leu val glu arg arg pro ser arg leu arg arg gly trp leu val gly ile ala
181/61                               211/71
GCG ACG CTG CTC GCG TTG GCC GGT GGC CTT GCG GCA GCG GGT TAT TTT GCG TTG CCG TCA
ala thr leu leu ala leu ala gly gly leu gly ala ala gly tyr phe ala leu arg ser
241/81                               271/91
CAC CAG GAA AGC CAA TCA ATC GCG CCC GAG GAC CTT GCG GCC ATT GAG GCG GCT AAG GAT
his gln glu ser gln ser ile ala arg glu asp leu ala ala ile glu ala ala lys asp
301/101                               331/111
TGC GTT GCG GCG ACG CAG GCA CCC GAT GCT GGG GCG ATG TCG GCT AGC ATG CAG AAG ATC
cys val ala ala thr gln ala pro asp ala gly ala met ser ala ser met gln lys ile
361/121                               391/131
ATC GAG TGT GCG ACC GGT GAT TTC GGT GCC CAG GCG TCG TTG TAC ACC AGC ATG CTC GTC
ile glu cys gly thr gly asp phe gly ala gln ala ser leu tyr thr ser met leu val
421/141                               451/151
GAG GCG TAT CAA GCG GCC AGC GTC CAC GTG CAA GTG ACC GAT ATG CCG GCG GCG GTC GAG
glu ala tyr gln ala ala ser val his val gln val thr asp met arg ala ala val glu
481/161                               511/171
CGC AAC AAC AAT GAC GGG TCG CTC GAT GTT CTG GTC GCG CTC CCG GTC AAG GTC TCC AAC
arg asn asn asn asp gly ser val asp val leu val ala leu arg val lys val ser asn
541/181                               571/191
ACC GAC TCG GAT GCC CAT GAA GTC GCG TAC COT CTT CCG GTC CCG ATG GCA CTG GAT GAG
thr asp ser asp ala his glu val gly tyr arg leu arg val arg met ala leu asp glu
601/201                               631/211
GGC CCG TAT AAG ATC GCC AAA CTC GAC CAG GTG ACC AAG TGA
gly arg tyr lys ile ala lys leu asp gln val thr lys GGA

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SEQ ID N° 38D

FIGURE 38D

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ORF d'après Cole et al., 1998 (Nature 393 537-544) Contenant Rv0175

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1/1                               31/11
TGA ACT GGT GGG GCG GGA TGG TGT CAA GTA CGC CGT CGC AAA CTC GAG CAC AAC AGG AGA
ORA thr gly gly ala gly trp cys gln val arg arg arg lys leu glu his asn arg arg
61/21                               31/31
CGA CGG ATG GAA GGA GAT GCT GGC GCG GCG CAG CTG AAC GGT GCC GAT GCG AAT AAG TCG
arg arg met glu gly asp ala gly ala gly gln leu asn pro ala asp ala asn lys ser
121/41                               151/51
TCG TCT ACG GAG GTG AAG GCG GCG GAT TCG GCG GAA TCT GAC GCC GGA GCC GAC CAG ACT
ser ser thr glu val lys ala ala asp ser ala glu ser asp ala gly ala asp gln thr
181/61                               211/71
GGC CCG CAG GTG AAG GCG GCG GAT TCG GCG GAA TCT GAC GCC GGA GAG CTC GCG GAG GAC
gly pro gln val lys ala ala asp ser ala glu ser asp ala gly glu leu gly glu asp
241/91                               271/91
GCG TGC CCA GAA CAG GCC CTC GTC GAG CCG GCG CCG TCG CCG TTG CCG CGA GCG TCG CTT
ala cys pro glu gln ala leu val glu arg arg pro ser arg leu arg arg gly trp leu
301/101                               331/111
GTT GCC ATT GCG GCG ACG CTG CTC GCG TTG GCG GGT GCG CTT GCG GCA GCG GGT TAT TTT
val gly ile ala ala thr leu leu ala leu ala gly gly leu gly ala ala gly tyr phe
361/121                               391/131
GGC TTG CGC TCA CAC CAG GAA ACC CAA TCA ATC GCG CGC GAG GAC CTT GCG GCC ATT GAG
ala leu arg ser his gln glu ser gln ser ile ala arg glu asp leu ala ala ile glu
421/141                               451/151
GCC GCT AAG GAT TGC GTT GCG GCG ACG CAG GCA CCC GAT GCT GGG GCG ATG TCG GCT AGC
ala ala lys asp cys val ala ala thr gln ala pro asp ala gly ala met ser ala ser
481/161                               511/171
ATG CAG AAG ATC ATC GAG TGT GGC ACC GGT GAT TTC GGT GCC CAG GCG TCG TTG TAC ACC
met gln lys ile ile glu cys gly thr gly asp phe gly ala gln ala ser leu tyr thr
541/181                               571/191
AGC ATG CTC GTC GAG GCG TAT CAA GCG GCC AGC GTC CAC GTC CAA GTG ACC GAT ATG CGC
ser met leu val glu ala tyr gln ala ala ser val his val gln val thr asp met arg
601/201                               631/211
GCG GCG GTC GAG CGC AAC AAC AAT GAC GCG TCG GTC GAT GTT CTG GTG GCG CTC CGG GTC
ala ala val glu arg asn asn asn asp gly ser val asp val leu val ala leu arg val
661/221                               691/231
AAG GTG TCC AAC ACC GAC TCG GAT GCC CAT GAA GTC GGC TAC CGT CTT CGG GTC CGG ATG
lys val ser asn thr asp ser asp ala his glu val gly tyr arg leu arg val arg met
721/241                               751/251
GCA CTG GAT GAG GCG CGC TAT AAG ATC GCC AAA CTC GAC CAG GTG ACC AAG TGA
ala leu asp glu gly arg tyr lys ile ala lys leu asp gln val thr lys ORF

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SEQ ID N° 38F

FIGURE 38F

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1/1                               31/11
ACA CCT CCC CCC CCG CCG CCG CTG CCG CCG GTT CCC TTT CCC AAG GAA TGT CCG GCG CCG
thr pro pro pro pro pro pro leu pro pro val pro phe pro lys glu cys pro ala pro
61/21                               91/31
GGC GTG ATG CAA GGC TGC CTT GAG AGC ACC AGC GGC TTG ATC ATG GGC ATC GAC AGC AAG
gly val met gln gly cys leu glu ser thr ser gly leu ile met gly ile asp ser lys
121/41                               151/51
ACC GCA CTG GTC GCC GAG CCG ATC ACC GGT GCC GTC GAG GAG ATC
thr ala leu val ala glu arg ile thr gly ala val glu glu ile

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SEQ ID N° 39A

FIGURE 39A

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1/1                               31/11
CAC CTC CCC CCC CCG CCG CCG TGC CCG CCG TTC CCT TTC CCA AGG AAT GTC CCG CCG CCG
his leu pro pro arg arg arg cys arg arg phe pro phe pro arg asn val arg arg arg
61/21                               91/31
GCG TGA TGC AAG GCT GCC TTG AGA GCA CCA GCG GCT TGA TCA TCG GCA TCG ACA GCA AGA
ala GPA cys lys ala ala leu arg ala pro ala ala GPA ser trp ala ser thr ala arg
121/41                               151/51
CCG CAC TGG TCG CCG AGC GCA TCA CCG CTG CCG TCG AGC AGA TC
pro his trp ser pro ser ala ser pro val pro ser arg arg

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SEQ ID N° 39B

FIGURE 39B

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1/1                               31/11
GAC ACC TCC CCC CCC CCG GCC GGT GCC GCC GGT TCC CTT TCC CAA GGA ATG TCC GGC GCC
asp thr ser pro pro ala ala ala ala ala gly ser leu ser gln gly met ser gly ala
61/21                               91/31
GGG CGT GAT GCA AGG CTG CCT TGA GAG CAC CAG CCG CTT GAT CAT GGG CAT CGA CAG CAA
gly arg asp ala arg leu pro GPA glu his gln arg leu asp his gly his arg gln gln
121/41                               151/51
GAC CCG ACT GGT CCG CGA GCG CAT CAC CCG TGC CTT CGA GGA GAT C
asp arg thr gly arg arg ala his his arg cys arg arg gly asp

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SEQ ID N° 39C

FIGURE 39C



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Séquence codante Sv3006 prédite par Cole et al., 1998 (Nature 393 537-544) et contenant seq39A

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1/1                               31/11
ATC TCG ACA ACG CGG TTG GTT CGA TCC GGA CTC GCC GCG CTG TCC GCG GCA GTG CTG GTA
Met trp thr thr arg leu val arg ser gly leu ala ala leu cys ala ala val leu val
61/21                               91/31
TCG AGC GCG TGC GCA CGG TTC AAC GAC GCT CAA TCT CAG CCG TTC ACC ACC GAA CCG GAG
ser ser gly cys ala arg phe asn asp ala gln ser gln pro phe thr thr glu pro glu
121/41                               151/51
CTG CCG CCC CAA CCC AGC TCG ACA CCT CCG CCC CCG CCG CCG CCG CCG GTT CCC TTT
leu arg pro gln pro ser ser thr pro pro pro pro pro pro leu pro pro val pro phe
181/61                               211/71
CCC AAG GAA TGT CCG GCG CCG GCG GTG ATG CAA GCG TGC CTT GAG ACC ACC ACC ACC TTC
pro lys glu cys pro ala pro gly val met gln gly cys leu glu ser thr ser gly leu
241/81                               271/91
ATC ATG GGC ATC GAC ACC AAG ACC GCA CTG GTC GCC GAG CCG ATC ACC GGT CCC CTC GAG
ile met gly ile asp ser lys thr ala leu val ala glu asg ile thr gly ala val glu
301/101                               331/111
GAG ATC TCT ATC AGC GCG GAG CCG AAG GTA AAG ACG GTC ATC CCC CTG GAT CCT CCC GGT
glu ile ser ile ser ala glu pro lys val lys thr val ile pro val asp pro ala gly
361/121                               391/131
GAC GGT GCG TTG ATG GAC ATT GTG CTG TCG CCC ACC TAC TCG CAA GAC CCG CTG ATG TAC
asp gly gly leu met asp ile val leu ser pro thr tyr ser gln asp arg leu met tyr
421/141                               451/151
GCC TAC ATC AAG ACG CCC ACC GAC AAC CCG GTG CTG CGA CTG CCC GAC GCG GAC ATC CCC
ala tyr ile ser thr pro thr asp asn arg val val asg val ala asp gly asp ile pro
481/161                               511/171
AAG GAC ATE CTG ACC GGC ATC CCC AAA GGT GCT GCC GGT AAC ACC GCG GCG CTG ATC TTC
lys asp ile leu thr gly ile pro lys gly ala ala gly asn thr gly ala leu ile phe
541/181                               571/191
ACC AGT CCC ACC ACG CTG CTC GTG ATG ACC GGG CAT GGT GGC GAC CCG GCG TTG CCC GGC
thr ser pro thr thr leu val val met thr gly asp ala gly asp pro ala leu ala ala
601/201                               631/211
GAT CCC CAA TCG TTG GCG GGT AAG GTC CTG GGT ATC GAA CAG GCG ACC ACC ATC GCG CAG
asp pro gln ser leu ala gly lys val leu arg ile glu gln pro thr thr ile gly gln
661/221                               691/231
ACG CCG CCG ACG ACG GCG CTG TCT GCG ATC GCG TCC GCG GCG GCG TTG TCG ATC GAT CCG
thr pro pro thr thr ala leu ser gly ile gly ser gly gly gly leu cys ile asp pro
721/241                               751/251
GTC GAC GCG TCG CTA TAT GTC GCG GAC CCG ACG CCA ACC GCG GAC CCA TTG CAG CCG ACC
val asp gly ser leu tyr val ala asp arg thr pro thr ala asp arg leu gln arg ile
781/261                               811/271
ACC AAG AAC TCG GAG GTC TCT ACG GTA TGG ACC TGG CCG GAC AAG CCC GCG GTC GCG GCG
thr lys asn ser glu val ser thr val trp thr trp pro asp lys pro gly val ala gly
841/281                               871/291
TGT GCG GCG ATG GAC GCG ACC GCG CTG GTC AAC CTG ATT AAT ACC AAA CTG ACG GTC GCG
cys ala ala met asp gly thr val leu val asn leu ile asn thr lys leu thr val ala
901/301                               931/311
GTC CCG CTC GCG CCG TCG ACC GGT GCG GTC ACC GGA GAA CCC GAC GTT GTC CCC AAA GAC
val arg leu ala pro ser thr gly ala val thr gly glu pro asp val val arg lys asp
961/321                               991/331
ACT CAT GCG CAT GCG TGG GCA TTA CCG ATG TCG CCG GAC GCG AAC GTC TGG GGA GCG ACC
thr his ala his ala trp ala leu arg met ser pro asp gly asn val trp gly ala thr
1021/341                               1051/351
GTC AAC AAG ACC GCG GCG GAC GCG GAG AAG CTC GAC GAT GTG GTG TTC CCG CTG TTC CCG
val asn lys thr ala gly asp ala glu lys leu asp asp val val phe pro leu phe pro
1081/361                               1111/371
CAG GGT GCG GCG TTC CCG CCG AAC AAC GAC GCG AAG ACC TCA
gln gly gly gly phe pro arg asn asn asp asp lys thr oxa

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SEQ ID N° 39D

FIGURE 39D  
FEUILLE DE REMPLACEMENT (REGLE 26)

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ORF d'après Cole et al., 1998 (Nature 393 537-544) et contenant Rv3006

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1/1                               31/11
TAA GGC CAT TTA GTG CCG AAT TGG GGA TTT GAG CCG CCG TTT CCG CAG ACA ATC CGC ACA
OCH gly his leu val pro asn trp gly phe glu arg arg phe arg gln thr ile arg thr
61/21                               91/31
TTG ACC CTG ACC AGC CCA CCA AAA GGC CCC AAT TGG GCG GCC ATG CCG ACA GTG CCG ACC
leu thr leu thr ser pro pro lys gly pro asn trp ala ala met pro thr val arg thr
121/41                               151/51
CCC GCA GGT GCG GGC GAT GCG CAC AAT GTC CGT ACC CTG TCG GTC ATG TGG ACA ACG CCG
pro ala gly gly gly asp ala his asn val arg ser leu ser val met trp thr thr arg
161/61                               211/71
TTG GTT CGA TCC GGA CTC GCC CGG CTG TCG GCG GCA GTG CTG GTA TCG AGC GGC TCG GCA
leu val arg ser gly leu ala ala leu cys ala ala val leu val ser ser gly cys ala
241/81                               271/91
CGG TTC AAC GAC GCT CAA TCT CAG CCG TTC ACC ACC GAA CCG GAG CTG CCG CCC CAA CCC
arg phe asn asp ala gln ser gln pro phe thr thr gle pro glu leu arg pro gln pro
301/101                               331/111
AGC TCG ACA CCT CCC CCC CCG CCG CCG CTG CCG CCG GTT CCC TTT CCC AAG GAA TGT CCG
ser ser thr pro pro pro pro pro pro leu pro pro val pro phe pro lys glu cys pro
361/121                               391/131
CGC CCG GGC GTG ATG CAA GGC TGC CTT GAG AGC ACC AGC GGC TTG ATC ATG GGC ATC GAC
ala pro gly val met gln gly cys leu glu ser thr ser gly leu ile met gly ile asp
421/141                               451/151
AGC AAG ACC GCA CTG GTC GCC GAG CGC ATC ACC GGT GCC GTC GAG GAG ATC TCT ATC ACC
ser lys thr ala leu val ala glu arg ile thr gly ala val glu glu ile ser ile ser
481/161                               511/171
GCC GAG CCG AAG GTA AAG ACG GTC ATC CCC GTG GAT CCT GCC GGT GAC GGT GGC TTG ATG
ala glu pro lys val lys thr val ile pro val asp pro ala gly asp gly gly leu met
541/181                               571/191
GAC ATT GTG CTG TCG CCC ACC TAC TCG CAA GAC CCG CTG ATG TAC GCC TAC ATC AGC ACG
asp ile val leu ser pro thr tyr ser gln asp arg leu met tyr ala tyr ile ser thr
601/201                               631/211
CCC ACC GAC AAC CCG GTG GTG CGA GTG GCC SAC GCC GAC ATC CCC AAG GAC ATC CTG ACC
pro thr asp asn arg val val arg val ala asp gly asp ile pro lys asp ile leu thr
661/221                               691/231
GGC ATC CCC AAA GGT GCT GCC GGT AAC ACC GGG GCG CTG ATC TTC ACC AGT CCC ACC ACG
gly ile pro lys gly ala ala gly asn thr gly ala leu ile phe thr ser pro thr thr
721/241                               751/251
CTG GTC GTG ATG ACC GGG GAT GCT GGC GAC CCG CCG TTG GCC GGC GAT CCC CAA TCG TTG
leu val val met thr gly asp ala gly asp pro ala leu ala ala asp pro gln ser leu
781/261                               811/271
GCC GGT AAG CTC CTG CGT ATC GAA CAG CCC ACC ACC ATC GCC CAG ACG CCG CCG ACG ACG
ala gly lys val leu arg ile gle gln pro thr thr ile gly gln thr pro pro thr thr
841/281                               871/291
CGC CTG TCT GGC ATC GGC TCC GGC GCG GCG TTG TCC ATC GAT CCG GTC GAC GCG TCG CTA
ala leu ser gly ile gly ser gly gly gly leu cys ile asp pro val asp gly ser leu
901/301                               931/311
TAT GTC GGC GAC CGC ACC CCA ACG GCG GAC CGA TTG CAG CCG ATC ACC AAG AAC TCG GCG
tyr val ala asp arg thr pro thr ala asp arg leu gln atg ile thr lys asn ser glu

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SEQ ID N° 39F

FIGURE 39F

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961/321  
 CTC TCT ACC GTA TGG ACC TGG CCG GAC AAG CCC GGC GTG GCC GCG TGT GCC GCG ATG GAC  
 val ser thr val trp thr trp pro asp lys pro gly val ala gly cys ala ala met asp  
 1021/341  
 GGC ACC GTG CTG GTC AAC CTG ATT AAT ACC AAA CTG ACC GTG GCG GTC CCG CTC GCG CCG  
 gly thr val leu val asn leu ile asn thr lys leu thr val ala val arg leu ala pro  
 1081/361  
 TCG ACC GGT GCG GTC ACC GGA GAA CCC GAC GTT GTC CCG AAA CAC ACT CAT GCG CAT GCG  
 ser thr gly ala val thr gly glu pro asp val val arg lys asp thr his ala his ala  
 1141/381  
 TGG GCA TTA CCG ATG TCG CCG GAC GGC AAC GTC TGG GGA GCC ACC GTC AAC AAG ACC GCC  
 trp ala leu arg met ser pro asp gly asn val trp gly ala thr val asn lys thr ala  
 1201/401  
 GGC GAC GCC GAG AAG CTC GAC GAT GTG GTG TTC CCG CTG TTC CCG CAG GGT GGC GCG TTC  
 gly asp ala glu lys leu asp asp val val phe pro leu phe pro gln gly gly gly phe  
 1261/421  
 CCG CCG AAC AAC GAC GAC AAG ACC TGA  
 pro arg asn asn asp asp lys thr ORA

SEQ ID N° 39F (suite)

FIGURE 39F (suite)

1/1  
 GAA GGC CTT GTT GAG CCG GCG CAC GAA AAC GAT CGT TGT GTG TAC ATT GGT GTG TAT GCC  
 glu gly leu val glu pro ala his glu asn asp arg cys val tyr ile gly val tyr gly  
 61/21  
 TCG GTT GAA CGT GTA TGT GCC CGA CGA ATT GCG GGA GCG CCG CAG GGC GCG GCG CTT GAA  
 ser val glu arg val cys ala arg arg ile gly gly ala arg gln gly ala gly leu glu  
 121/41  
 CGT CTC GCG GCT GAC TCA GCG CCG GAT CAG TGC CGA GTT GGA GAA CTC CCG AAC CGA TGC  
 arg leu gly ala asp ser gly arg asp gln cys arg val gly glu leu arg asn arg cys  
 181/61  
 GTG GCT TGA GGG GTT GGA ACC CAG AAG CAC CCG CCG TCG GCA TGA TGA CGT GGT GCG TGC  
 val ala ORA gly val gly thr gln lys his arg arg ser ala ORA ORA arg ala gly cys  
 241/81  
 GAT CGA TGC CCG TCG CGA TGA GTT CGA AGC GTG AGA GCA TCG CCC ACT TCG CCG CCG GAG  
 asp arg cys arg ser arg ORA val arg ser val arg ala ser pro thr ser pro pro gln  
 301/101  
 CAG GTG GTC GTC GAC GCG AGT GCG ATG GTG GAT C  
 gln val val val asp ala ser ala met val asp

SEQ ID N° 40A

FIGURE 40A

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1/1                               31/11
AAG GCC TTG TTG ACC CGG CGC ACC AAA ACC ATC GTT GTG TGT ACA TTG GTG TGT ATG GCT
lys ala leu leu ser arg arg thr lys thr ile val val cys thr leu val cys met ala
61/21                               91/31
CGG TTG AAC GTG TAT GTG CCC GAC GAA TTG GCG GAG CGC GGC AGG GCG CGG GGC TTG AAC
arg leu asn val tyr val pro asp glu leu ala glu arg ala arg ala arg gly leu asn
121/41                               151/51
GTC TCG GCG CTG ACT CAG GCC GCG ATC AGT GCC GAG TTG GAG AAC TCC GCA ACC GAT GCG
val ser ala leu thr gln ala ala ile ser ala glu leu glu asn ser ala thr asp ala
181/61                               211/71
TGG CTT GAG GGG TTG GAA CCC AGA ACC ACC GGC GCT CGG CAT GAT GAC GTG CTG GGT GCG
trp leu glu gly leu glu pro arg ser thr gly ala arg his asp asp val leu gly ala
241/81                               271/91
ATC GAT GCC GCT CGC GAT GAG TTC GAA GCG TGA GAG CAT CGC CCA CTT CGC CGC CGG AGC
ile asp ala ala arg asp glu phe glu ala opa glu his arg pro leu arg arg arg ser
301/101                               331/111
AGG TCG TCG TCG ACC CCA GTG CCA TCG TGG ATC
arg trp ser ser thr arg val pro trp trp ile

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SEQ ID N° 40B

FIGURE 40B

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1/1                               31/11
AGG CCT TGT TGA GCC GGC GCA CCA AAA CGA TCG TTG TGT GTA CAT TGG TGT GTA TGG CTC
arg pro cys opa ala gly ala arg lys arg ser leu cys val his trp cys val trp leu
61/21                               91/31
GGT TGA ACG TGT ATG TGC CCG ACC AAT TGG CGG AGC GCG CCA GGG CGC CGG GCT TGA ACC
gly opa thr cys met cys pro thr asn trp arg ser ala pro gly arg gly ala opa thr
121/41                               151/51
TCT CGG CGC TGA CTC AGG CCG CGA TCA GTG CCG AGT TGG ACA ACT CGC CAA CCG ATG CGT
ser arg arg opa leu arg pro arg ser val pro ser trp arg thr pro gln pro met arg
181/61                               211/71
GGC TTG AGG GGT TGG AAC CCA GAA GCA CCG GCG CTC GGC ATG ATG ACC TGC TCG GTG CGA
gly leu arg gly trp asn pro glu ala pro ala leu gly met met thr cys trp val arg
241/81                               271/91
TCG ATG CCG CTC GCG ATG AGT TCG AAG CGT GAG AGC ATC GGC CAC TTC GGC GGC GGA GCA
ser met pro leu ala met ser ser lys arg glu ser ile ala his phe ala ala gly ala
301/101
CGT GGT CGT CGA CGC GAG TCC CAT GGT GGA TC
gly gly arg arg arg glu cys his gly gly

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SEQ ID N° 40C

FIGURE 40C

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Séquence codante Rv0549c prédite par Cole et al., 1998 (Nature 393:537-544) et contenant seq40A

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1/1                               31/11
gtg aga gca tgg ccc act tgg cgg cag gag cag gtg gtc gtc gac gag agt gcc atg gtg
val arg ala ser pro thr ser pro pro glu gln val val val asp ala ser ala met val
61/21                               91/31
gat cta ctg gct cgc acc agc gat cgg tgc tct gcg gtg cgc gcc cgg ctg gct cgg acc
asp leu leu ala arg thr ser asp arg cys ser ala val arg ala arg leu ala arg thr
121/41                               151/51
ggg atg ccc gag cgg gcc cac ttc gat gca gag gtg ttg tgg gcc ctg ggg cgc atg cag
ala met his ala pro ala his phe asp ala glu val leu ser ala leu gly arg met gln
181/61                               211/71
cgc gcc ggc gca ctg acc gtt gcc tat gtc gat gcc gca ctg gag gag ttg cga cag gtg
arg ala gly ala leu thr val ala tyr val asp ala ala leu glu glu leu arg gln val
241/81                               271/91
cgg gtg act cga cac ggt ctt tgg tgg ctg ctt gct gga gcc tgg tgg cgc cgc gac acc
pro val thr arg his gly leu ser ser leu leu ala gly ala trp ser arg arg asp thr
301/101                               331/111
ctc cgc ctg acc gat gcc ctg tac gtc gag ctg gcc gaa acg gca ggt ctg gtg ttg ttg
leu arg leu thr asp ala leu tyr val glu leu ala glu thr ala gly leu val leu leu
361/121                               391/131
acc acc gac gaa aga ttg gaa cgc gcc tgg ccc tgg gct cac gcc atc gcc tga
thr thr asp glu arg leu ala arg ala trp pro ser ala his ala ile gly CFA

```

SEQ ID N° 40D

FIGURE 40D

ORF d'après Cole et al., 1998 (Nature 393:537-544) et contenant Rv0549c

```

1/1                               31/11
tga gtt cga agc gtg aga gca tgg ccc act tgg cgg cag gag cag gtg gtc gtc gac gag
CFA val arg ser val arg ala ser pro thr ser pro pro glu gln val val val asp ala
61/21                               91/31
agt gcc atg gtg gat cta ctg gct cgc acc agc gat cgg tgc tct gcg gtg cgc gcc cgg
ser ala met val asp leu leu ala arg thr ser asp arg cys ser ala val arg ala arg
121/41                               151/51
ctg gct cgg acc gcc atg cac gcc cgg gcc cac ttc gat gca gag gtg ttg tgg gcc ctg
leu ala arg thr ala met his ala pro ala his phe asp ala glu val leu ser ala leu
181/61                               211/71
ggg cgc atg cag cgc gcc ggc gca ctg acc gtt gcc tat gtc gat gcc gca ctg gag gag
gly arg met gln arg ala gly ala leu thr val ala tyr val asp ala ala leu glu glu
241/91                               271/91
ttg cga cag gtg cgg gtg act cga cac ggt ctt tgg tgg ctg ctt gct gga gcc tgg tgg
leu arg gln val pro val thr arg his gly leu ser ser leu leu ala gly ala trp ser
301/101                               331/111
cgc cgc gac acc ctg cgc ctg acc gat gcc ctg tac gtc gag ctg gcc gaa acg gca ggt
arg arg asp thr leu arg leu thr asp ala leu tyr val glu leu ala glu thr ala gly
361/121                               391/131
ctg gtg ttg ttg acc acc gac gaa aga ttg gaa cgc gcc tgg ccc tgg gct cac gcc atc
leu val leu leu thr thr asp glu arg leu ala arg ala trp pro ser ala his ala ile
421/141
ggc tga
gly CFA

```

SEQ ID N° 40F

FEUILLE DE REMPLACEMENT (RÈGLE 26)

FIGURE 40F

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```

1/1                               31/11
CCT GGC CGG GAC GCC TAC GTG TAG CCC GCG GCT AGC ACA GGA TAG CCA TTG TTG TGC GGT
pro gly arg asp ala tyr val AMB pro ala ala ser thr gly AMB pro leu leu cys gly
61/21                               91/31
AGC GGC AAA ACG ATC AGC CCT TCG CCG ACA TGT CAG CAC CCG CCT TGG CCG GGA GAG CCG
ser ala lys thr ile ser pro ser arg thr cys gln his pro pro trp pro gly glu arg
121/41                               151/51
CGT CGT GAC CGT GCT GTC ACC ACG TCT GGT TAG GCT CCG GGC GCG GCG TGG CCG GGA GGA
arg arg asp arg ala val thr thr ser gly AMB ala arg gly ala gly trp arg gly gly
181/61                               211/71
GGT GTG TTG CCG AGG AGG TGT GTT GTA GTG GGG ACG GCG GAT CCG CCG TTG GAC GCC TCG
gly val leu arg arg arg cys val val val gly thr ala asp arg pro leu asp ala ser
241/81                               271/91
GCC TTG CCG GAC TGG GCA CAC GCG GTC GTC AGC GAT C
ala leu arg asp trp ala his ala val val ser asp

```

SEQ ID N° 41A

FIGURE 41A

```

1/1                               31/11
CTG GCC GGG ACG CCT ACC TGT AGC CCG CCG CTA CCA CAG GAT AGC CAT TGT TGT GCG GTA
leu ala gly thr pro thr cys ser pro arg leu ala gln asp ser his cys cys ala val
61/21                               91/31
GGG CCA AAA CGA TCA GCG CTT CCG GGA CAT GTC ACC ACC CCG CTT GCG CCG GAG AGC GCG
ala pro lys arg ser ala leu arg gly his val ser thr arg leu gly arg glu ser gly
121/41                               151/51
GTC GTG ACC GTG CTG TCA CCA CGT CTG GTT AGG CTC GGG GCG CCG GCT GCG GCG GAG GAG
val val thr val leu ser pro arg leu val arg leu gly ala arg ala gly ala glu glu
181/61                               211/71
GTG TGT TGC GGA GGA GGT GTS TTG TAG TGG GGA CCG CCG ATC GGC CGT TGG ACG CCT CCG
val cys cys gly gly gly val leu AMB trp gly arg arg ile gly arg trp thr pro arg
241/81                               271/91
CCT TGC GGG ACT GCG CAC ACG CCG TCG TCA GCG ATC
pro cys gly thr gly his thr pro ser ser ala ile

```

SEQ ID N° 41B

FIGURE 41B

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```

1/1                               31/11
TGG CCG GGA CGC CTA CGT GTA GCC CGC GGC TAG CAC AGG ATA GCC ATT GTT GTC CGG TAG
trp pro gly arg leu arg val ala arg gly AMB his arg ile ala ile val val arg AMB
61/21
CGC CAA AAC GAT CAG CCC TTC GCG GAC ATG TCA GCA CCC GCC TTG GCC GCG AGA GCG GCG
arg gln asn asp gln pro phe ala asp met ser ala pro ala leu ala gly arg ala ala
121/41
TCG TGA CCG TGC TGT CAC CAC GTC TGG TTA GGC TCG GCG CGC GCG CTC GCG CCG AGG AGG
ser OPA pro cys cys his his val trp leu gly ser gly arg gly leu ala arg arg arg
181/61
TGT GTT CCG GAG GAG GTC TGT TGT AGT GGG GAC GCG GGA TCG GCC GTT GGA CCG CTC GCG
cys val ala glu glu val cys cys ser gly asp gly gly ser ala val gly arg leu gly
241/81
CTT GCG GGA CTG GCG ACA CGC CGT CGT CAG CGA TC
leu ala gly leu gly thr arg arg arg gln arg

```

SEQ ID N° 41C

FIGURE 41C

Séquence codante Bv2975c prédite par Cole et al, 1998 (Nature 393: 537-544) et contenant seq41A

```

1/1                               31/11
gtg ggg acg gag gat cgg ccg ttg gac gcc tgg gac ttg egg gac tgg gca cac gcc gtc
val gly thr ala asp arg pro leu asp ala ser ala leu arg asp trp ala his ala val
61/21
gtc agc gag ctg atc ctc cac atc gac gag atc aac cgg ctg aat gtg ttc ccg gtc gct
val ser asp leu ile leu his ile asp glu ile asn arg leu asn val phe pro val ala
121/41
gac tcc gat acc gcc gtc aac atg ctg ttc acc atg cgt gcc gcg gtc gta gaa gct gat
asp ser asp thr gly val asn met leu phe thr met arg ala ala val val glu ala asp
181/61
ttg cac gcg aat tgg cag gct gac gcc gaa gac gtg gcg cgg gtt gcg gcc gct ctc gcg
leu his ala asn ser gln ala asp ala glu asp val ala arg val ala ala ala leu ala
241/81
gcc gcc gcg cgt tga
ala gly ala arg OPA

```

SEQ ID N° 41D

FIGURE 41D

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GRF d'après Cole et al, 1998 (Nature 393: 537-544) et contenant Rv2975c

```

1/1                               31/31
tag gct cgg ggc ggc ggc tgg cgc gga gga ggt gtg ttg cgg agg agg tgt gtt gta gtg
AMB ala arg gly ala gly trp arg gly gly gly val leu arg arg arg cys val val val
61/21                               91/31
ggg acg gcg gat cgg cgg ttg gac gcc tog gcc ttg cgg gac tgg gca cac gcc gtc gtc
gly thr ala asp arg pro leu asp ala ser ala leu arg asp trp ala his ala val val
121/41                               151/51
agg gat ctg atc ctc cac atc gac gag atc aac cgg ctc aat gtg ttc cgg gtc gct gac
ser asp leu ile leu his ile asp glu ile asn arg leu asn val phe pro val ala asp
181/61                               211/71
tcc gat acc ggc gtc aac atg ctg ttc acc atg cgt gcc gcg gtc gta gaa gct gat ttg
ser asp thr gly val asn met leu phe thr met arg ala ala val val glu ala asp leu
241/81                               271/91
cac gcg aat tog cag gct gac gcc gaa gac gtg gcg cgg gtt gcg gcc gct ctc gcg gcc
his ala asn ser gln ala asp ala glu asp val ala arg val ala ala ala leu ala ala
301/101
ggc gcg cgt tga
gly ala arg CFA

```

SEQ ID N° 41F

FIGURE 41F

séquence Rv 2974C prédite par Cole et al. (Nature 393:537-544) et pouvant être dans la même phase de lecture que Seq41D. Le séquençage de cette région fait apparaître dans un cas sur trois une délétion de deux nucléotides mettant en phase bservé dans

```

1/1                               31/31
ttg aac gga gct cgc ggc aac tcc ggc gtg atc ctg tcc cag atc ctg cgc ggg atc gca
leu asn gly ala arg gly asn ser gly val ile leu ser gln ile leu arg gly ile ala
61/21                               91/31
gag gtg acc gcg act gcg gcc gcc gcc tct ggc gcg gta ttg cgg gcg gtc gac gcc aac
gln val thr ala thr ala ala ala ala ser gly ala val leu arg ala val asp ala asn
121/41                               151/51
gcc ctc ggg gcc gcg ttg tgg cgc gga gtc gag ttg gtc gtc gcg tog atg ggt gcc gtg
ala leu gly ala ala leu trp arg gly val glu leu val val ala ser met gly gly val
181/61                               211/71
gag gtg ccg gga act atc gtc tog gtg ctg cgg gcc gcc gcc gga gcc gtc gac cag tgc
glu val pro gly thr ile val ser val leu arg ala ala ala gly ala val asp gln cys
241/81                               271/91
ggg cac gag ggg ttg gcc ggt gcg gta acc gcc gcc ggt gac gcg gcg gtc atc gcg ctg
ala his glu gly leu ala gly ala val thr ala ala gly asp ala ala val ile ala leu
301/101                               331/111
gaa aag acc ccc gaa cag atc gac gtg ctc gcc gat gcg gcc gcg gtg gac gcc gcc gga
glu lys thr pro glu gln leu asp val leu ala asp ala gly ala val asp ala gly gly

```

SEQ ID N° 41S

FIGURE 41S

FEUILLE DE REMPLACEMENT (REGLE 26)



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361/121 391/131  
 cgg ggc ctg ctg gtt ctg ctg gac gcg ttg cgc tcc acc atc tgc ggg cag gaa cct gcc  
 arg gly leu leu val leu leu asp ala leu arg ser thr ile cys gly gln ala pro ala  
 421/141 451/151  
 cgg ggc gtc tac gaa ccc tgg ccg cgc gcg ttg ccg acc gac acg gct acc gaa cgc ccc  
 arg ala val tyr glu pro ser pro arg ala leu pro thr asp thr ala thr gln arg pro  
 481/161 511/171  
 gcc ccg caa ttc gag gtg atg tat ctg ttg gcg gta tgt gat gct gca gcg gcg gac cag  
 ala pro gln phe glu val met tyr leu leu ala val cys asp ala ala ala ala asp gln  
 541/181 571/191  
 ttg cgg gat cga ctg aag gaa ttg ggt gag ttg gtg gcc atc gcc gct gct ccg ccc gac  
 leu arg asp arg leu lys glu leu gly glu ser val ala ile ala ala ala pro pro asp  
 601/201 631/211  
 agc tac tcc gta cac gtc cac acc gac gac gcc ggt gcc gcc gtg gaa gcc gga ttg gcg  
 ser tyr ser val his val his thr asp asp ala gly ala ala val glu ala gly leu ala  
 661/221 691/231  
 gtg ggg cga gtt agc cgg atc gtg atc tgg gcg ctg ggt tcc ggg acc agc gga ttg ccg  
 val gly arg val ser arg ile val ile ser ala leu gly ser gly thr ser gly leu pro  
 721/241 751/251  
 gcc ggt ggc tgg acg cgg ggc cgc gcc gtg ctg gcg gtc gtc gac gcc gac ggt gcc gcc  
 ala gly gly trp thr arg gly arg ala val leu ala val val asp gly asp gly ala ala  
 781/261 811/271  
 gag ctg ttc gcc ggg gag ggc gcc tac gtg ctg cga ccg ggt cca gac gcc gtg acc ccg  
 glu leu phe ala gly glu gly ala cys val leu arg pro gly pro asp ala val thr pro  
 841/281 871/291  
 gcc gcc gat atc agt gcc cac cag ctg gtg cgg gcc gtg gta gac acc ggc gcc gcg cac  
 ala ala asp ile ser ala his gln leu val arg ala val val asp thr gly ala ala his  
 901/301 931/311  
 gtg atg gtg ctg ccc aat ggc tat gtg gcc gcc gaa gaa ctg gtg gcc ggg tgt acc gcg  
 val met val leu pro asn gly tyr val ala ala glu glu leu val ala gly cys thr ala  
 961/321 991/331  
 gcg atc gcc tgg gcc gtc gac gtg gta ccc gtc ccg acc gga tgg atg gtg cag ggg ttg  
 ala ile gly trp gly val asp val val pro val pro thr gly ser met val gln gly leu  
 1021/341 1051/351  
 gcc gcg ctg gcc gtg cat gac gcg gcc cgc cag gcc gtc gac gac ggc tac agc atg gcc  
 ala ala leu ala val his asp ala ala arg gln ala val asp asp gly tyr ser met ala  
 1081/361 1111/371  
 cgt gcc gcc ggt ggt tcc cgg cac gga tgg gtg cgc att gcc acc caa aag gcg ctg acc  
 arg ala ala gly ala ser arg his gly ser val arg ile ala thr gln lys ala leu thr  
 1141/381 1171/391  
 tgg gcc ggt acc tgc aag ccg gcc gac ggt ctg ggt atc gcc gcc gac gag gtg ctg atc  
 trp ala gly thr cys lys pro gly asp gly leu gly ile ala gly asp glu val leu ile  
 1201/401 1231/411  
 gtc gcc gac gat gtc gcc ggg ggg gcc atc ggt ctg gtc gac ctg ttg ttg gaa tgg gga  
 val ala asp asp val ala ala ala ala ile gly leu val asp leu leu leu ala ser gly  
 1261/421 1291/431  
 gcc gat ctg gtg acg gtg cta att gcc gcc gcc gta acc gaa gac gtg ggt gtc gtc ctg  
 gly asp leu val thr val leu ile gly ala gly val thr glu asp val ala val val leu  
 1321/441 1351/451  
 gaa cgg cat gtg cac gac cac cat cca gcc acc gag ctg gtc tcc tac cgc acc gga cac  
 glu arg his val his asp his his pro gly thr glu leu val ser tyr arg thr gly his  
 1381/461 1411/471  
 cgc gcc gac gcg ctg ctg atc ggg gtc gag tag  
 arg gly asp ala leu leu ile gly val glu AMS

SEQ ID N° 41S (suite)

FIGURE 41S (suite)  
 FEUILLE DE REMPLACEMENT (REGLE 26)

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Seq41T comprenant seq 41F et seq 41S

1/1 31/31  
 tta ggc tgc ggg ggc ggc ctg ggc ggc agg agg tgc gtt ggc gag gag gtc tgc tgc agt  
 leu gly ser gly arg gly leu ala arg arg arg cys val ala glu glu val cys cys ser  
 AMS ala arg gly ala gly trp arg gly gly gly val leu arg arg arg cys val val val  
 arg leu gly ala arg ala gly ala glu glu val cys cys gly gly gly val leu AMS trp  
 61/21 31/31  
 ggg gac ggc gga tgc ggc gtt gga ggc ctc ggc ctt ggc ggc ctg ggc aca ggc cgt cgt  
 gly asp gly gly ser ala val gly arg leu gly leu ala gly leu gly thr arg arg arg  
 gly thr ala asp arg pro leu asp ala ser ala leu arg asp trp ala his ala val val  
 gly arg arg ile gly arg trp thr pro arg pro cys gly thr gly his thr pro ser ser  
 121/41 151/51  
 cag cga tct gat cct cca cac cga cga gat caa cgc gct caa tgc gtc ccc ggt cgc tga  
 gin arg ser asp pro pro his arg arg asp gin pro ala gin cys val pro gly arg CPA  
 ser asp leu ile leu his ile asp glu ile asn arg leu asn val phe pro val ala asp  
 ala ile CPA ser ser thr ser thr arg ser thr gly ser ser cys ser arg ser leu thr  
 181/61 211/71  
 ctc cga tgc cgc cgt caa cac gct gtt caa cat ggc tgc cgc ggt cgt aga agc tga ttt  
 leu arg tyr arg arg gin his ala val his his ala cys arg gly arg arg ser CPA phe  
 ser asp thr gly val asn met leu phe thr met arg ala ala val val glu ala asp leu  
 pro ile pro ala ser thr cys cys ser pro cys val pro arg ser AMS lys leu ile cys  
 241/81 271/91  
 gca cgc gaa ttc gca ggc tga cgc cga aga cgc ggc ggc gct tgc ggc cgc tct cgc ggc  
 ala arg glu phe ala gly CPA arg arg arg arg gly ala gly cys gly arg ser arg gly  
 his ala asn ser gin ala asp ala glu asp val ala arg val ala ala ala leu ala ala  
 thr arg ile arg arg leu thr pro lys thr trp arg gly leu arg pro leu ser arg pro  
 301/101 331/111  
 cgg cgc ggc ttg aac gga gct cgc ggc aac tcc ggc gtc atc ctg tcc cag atc ctg cgc  
 arg arg ala leu asn gly ala arg gly asn ser gly val ile leu ser gin ile leu arg  
 gly ser gin arg CPA thr gin leu ala ala thr pro ala CPA ser cys pro arg ser cys ala  
 ala arg val glu arg ser ser arg gin leu arg arg asp pro val pro asp pro ala arg  
 361/121 391/131  
 ggg atc gca gag gtc acc ggc act ggc ggc ggc ggc tct ggc gag gta ttg cgc ggc gtc  
 gly ile ala glu val thr ala thr ala ala ala ala ser gly ala val leu arg ala val  
 gly ser gin arg CPA pro arg leu arg pro pro pro leu ala arg tyr cys gly arg ser  
 asp arg arg gly asp arg asp cys gly arg arg leu trp arg gly ile ala gly gly arg  
 421/141 451/151  
 gac ggc aac ggc ctc ggc ggc ggc ttg tgg ggc ggc gtc gag tgc gtc gtc ggc tgc arg  
 asp ala asn ala leu gly ala ala leu trp arg gly val glu leu val val ala ser met  
 thr pro thr pro ser gly pro arg cys gly ala ala ala ser ser trp ser ser arg arg trp  
 arg gin arg pro arg gly arg val val ala arg arg val gly arg arg val asp gly  
 481/161 511/171  
 ggt ggc gtc gag gtc cgc gga act atc gtc tgc gtc ctg cgc ggc ggc ggc ggc ggc gtc  
 gly gly val glu val pro gly thr ile val ser val leu arg ala ala ala gly ala val  
 val ala trp arg cys arg glu leu ser ser arg cys cys gly pro pro pro glu pro ser  
 trp arg gly gly ala gly asn tyr arg leu gly ala ala gly arg arg arg ser arg arg  
 541/181 571/191  
 gac cag tgc ggc cac gag ggc ttg ggc ggt ggc gtc acc ggc ggc ggt gac ggc ggc gtc  
 asp gin cys ala his glu gly leu ala gly ala val thr ala ala gly asp ala ala val  
 thr ser ala arg thr arg gly trp pro val arg ser pro pro pro val thr arg arg ser  
 pro val arg ala arg gly val gly arg cys gly his arg arg arg CPA arg gly gly his  
 601/201 631/211  
 atc ggc ctg gaa aag acc ccc gaa cag ctt gac gtc ctc ggc gat ggc ggc ggc gtc gac  
 ile ala leu glu lys thr pro glu gin leu asp val leu ala asp ala gly ala val asp  
 ser arg trp lys arg pro pro asn ser leu thr cys ser pro met arg ala arg trp thr  
 arg ala gly lys asp pro arg thr ala CPA arg ala arg arg cys gly arg gly gly arg  
 661/221 691/231  
 gcc gcc gga cgc gcc ctg ctg gtt ctg ctg gac ggc trp cgc tcc acc atc tgc ggc cag  
 ala gly gly arg gly leu leu val leu leu asp ala leu arg ser thr ile cys gly gin  
 pro ala asp gly ala cys trp phe cys trp thr arg cys ala pro pro ser ala gly arg  
 arg arg thr gly pro ala gly ser ala gly arg val ala leu his his leu arg ala gly

SEQ ID N° 41T

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721/241 731/251  
 gaa cgt gcc cgg gag ggc tac gaa ccc tgg cgg cgc ggg tgg cgg acc gac aag gct acc  
 ala pro ala arg ala val tyr glu pro ser pro arg ala leu pro thr asp thr ala thr  
 his leu pro gly arg ser thr asn pro arg arg ala arg cys arg pro thr arg leu pro  
 thr cys pro gly gly leu arg thr leu ala ala arg val ala asp arg his gly tyr pro  
 781/261 811/271  
 caa cgc ccc gcc cgg caa ctc gag gtg atg tat cgg ttg ggg gta tgt gat gct gca ggg  
 gln arg pro ala pro gln phe glu val met tyr leu leu ala val cys asp ala ala ala  
 asn ala pro pro arg asn ser arg CPA cys ile cys trp arg tyr val met leu gln arg  
 thr pro arg pro ala ile arg gly asp val ser val gly gly met CPA cys cys ser gly  
 841/281 871/291  
 gag gac cag ttg cgg gat cga ctc aag gaa ttg ggt gag tgg ggg gcc atc gcc gct gct  
 ala asp gln leu arg asp arg leu lys glu leu gly glu ser val ala ile ala ala ala  
 arg thr ser cys gly ile asp ser arg asn trp val ser arg trp pro ser pro leu leu  
 gly pro val ala gly ser thr gln gly ile gly CPA val gly gly his arg arg cys ser  
 901/301 931/311  
 cgg ccc gac agc tac tcc gta cac gtc cac acc gac gac gcc ggt gcc gcc gtg gaa gcc  
 pro pro asp ser tyr ser val his val his thr asp asp ala gly ala ala val glu ala  
 arg pro thr ala thr pro tyr thr ser thr pro thr thr pro val pro pro trp lys pro  
 ala arg gln leu leu arg thr arg pro his arg arg arg arg cys arg arg gly ser arg  
 961/321 991/331  
 gga ttg cgg ggg cga gtt agc cgg atc gtg atc tgg cgg ctc ggt tcc ggg acc agc  
 gly leu ala val gly arg val ser arg ile val ile ser ala leu gly ser gly thr ser  
 asp trp arg trp gly glu leu ala gly ser CPA ser arg arg ser val pro gly pro ala  
 ile gly gly gly ala ser AMB pro asp arg asp leu gly ala arg phe arg asp gln arg  
 1021/341 1051/351  
 gga ttg cgg gcc ggt ggc tgg acg cgg gcc cgt gcc gtg ctg ggg gtc gtc gac gcc gac  
 gly leu pro ala gly gly trp thr arg gly arg ala val leu ala val val asp gly asp  
 asp cys arg pro val ala gly arg gly ala ala pro cys trp arg ser thr ala thr  
 ile ala gly arg trp leu asp ala gly pro arg arg ala gly gly arg arg arg arg arg  
 1081/361 1111/371  
 ggt gcc gcc gag cgg ttc gcc ggg gag gcc gcc tgc ggg cgg cys cgg ggt cca gac gcc  
 gly ala ala glu leu phe ala gly glu gly ala cys val leu arg pro gly pro asp ala  
 val pro pro ser cys ser pro gly arg ala pro ala cys cys asp arg val gln thr pro  
 cys arg arg ala val arg arg gly gly arg leu arg ala ala thr gly ser arg arg arg  
 1141/381 1171/391  
 gag acc cgg gcc gcc gat atc agt gcc cac cag cgg gtg cgg gcc gtg gta gac acc gcc  
 val thr pro ala ala asp ile ser ala his gln leu val arg ala val val asp thr gly  
 CPA his arg pro pro ile ser val pro thr ser trp cys gly pro trp AMB thr pro ala  
 asp thr gly arg arg tyr gln cys pro pro ala gly ala gly arg gly arg his arg arg  
 1201/401 1231/411  
 gcc cgg cac gtg atg gtg cgg acc aat gcc tat gtg gcc gcc gaa gaa cgg gtg gcc ggg  
 ala ala his val met val leu pro asn gly tyr val ala ala glu glu leu val ala gly  
 pro arg thr CPA trp cys cys pro met ala met trp pro pro lys asn trp trp pro gly  
 arg ala arg asp gly ala ala gln trp leu cys gly arg arg arg thr gly gly arg val  
 1261/421 1291/431  
 tgt acc ggg gcc atc ggc tgg gcc gtc gac gtg gta ccc gtg cgg acc gga tgg atg gtg  
 cys thr ala ala ile gly trp gly val asp val val pro val pro thr gly ser met val  
 val pro arg arg ser ala gly ala ser thr trp tyr pro cys arg pro asp arg trp cys  
 tyr arg gly asp arg leu gly arg arg arg gly thr arg ala asp arg ile asp gly ala  
 1321/441 1351/451  
 cag ggg ttg gcc ggg cgg gcc gtg cat gac gcc gcc cgc cag gcc gtc gac gac gcc tac  
 gln gly leu ala ala leu ala val his asp ala ala arg gln ala val asp asp gly tyr  
 arg gly trp pro arg trp pro cys met thr arg pro ala arg pro ser thr thr ala thr  
 gly val gly arg ala gly arg ala CPA arg gly pro pro gly arg arg arg arg leu gln  
 1381/461 1411/471  
 agc atg gcc cgt gcc gcc ggt gat tcc cgg cac gga tgg gtg cgc att gcc acc caa aag  
 ser met ala arg ala ala gly ala ser arg his gly ser val arg ile ala thr gln lys  
 ala trp pro val pro pro val leu pro gly thr asp arg cys ala leu pro pro lys arg  
 his gly pro cys arg arg cys phe pro ala arg ile gly ala his cys his pro lys gly

SEQ ID N° 41T (suite 1)

FIGURE 41T (suite 1)  
 FEUILLE DE REMPLACEMENT (RÈGLE 26)

136/185

1441/481 1471/491  
 gag ctg acc tgg gcc ggt acc cgc aag ccg gcc gac ggt ctg ggt atc gcc gcc gac gag  
 ala leu thr trp ala gly thr cys lys pro gly asp gly leu gly ile ala gly asp glu  
 arg OFA pro gly pro val pro ala ser arg ala thr val trp val ser arg ala thr arg  
 ala asp leu gly arg tyr leu gln ala gly arg arg ser gly tyr arg gly arg arg gly  
 1501/501 1531/511  
 gtg ctg atc gtc gcc gac gat gtc gcc gcc gcc gcc atc ggt atg gtc gac ctg ttg ttg  
 val leu ile val ala asp asp val ala ala ala ile gly leu val asp leu leu leu  
 cys OFA ser ser pro thr met ser pro arg arg pro ser val trp ser thr cys cys trp  
 ala asp arg arg arg arg cys arg arg gly gly his arg ser gly arg pro val val gly  
 1561/521 1591/531  
 gca tgg gga gcc gat ctg gtg acg gtg cta att gcc gcc gcc gta acc gaa gac gtg gct  
 ala ser gly gly asp leu val thr val leu ile gly ala gly val thr glu asp val ala  
 his arg glu ala ile trp OFA arg cys OCH leu ala pro ala OCH pro lys thr trp leu  
 ile gly arg arg ser gly asp gly ala ser trp arg arg arg ser arg arg arg gly cys  
 1621/541 1651/551  
 gtc gtc ctg gac ccg cat gtg cac gac cac cat cca gcc acc gag ctg gtc tcc tac ccg  
 val val leu glu arg his val his asp his his pro gly thr glu leu val ser tyr arg  
 ser ser trp asn gly met cys thr thr thr ile gln ala pro ser trp ser pro thr ala  
 arg pro gly thr ala cys ala arg pro pro ser arg his arg ala gly leu leu pro his  
 1691/581 1711/571  
 acc gga cac ccg gcc gac gcc ctg ctg atc ggg gtc gag tag  
 thr gly his arg gly asp ala leu leu ile gly val glu AMB  
 pro asp thr ala ala thr arg cys OFA ser gly ser ser  
 arg thr pro arg arg arg ala ala asp arg gly arg val

SEQ ID N° 41T (suite 2)

FIGURE 41T (suite 2)

1/1 31/11  
 GCC GGT AAC GCC GCG TCC CAG TGC TAT CCG TCC GCC GGA CCG CCC GAA ACA TCA GCG GCG  
 ala gly asp ala ala ser gln cys tyr pro ser ala gly pro pro glu thr ser ala ala  
 61/21 91/31  
 GGC GGC CCG GTC GGC GCG GGC CCG GCT CGA CCC GCT CCA CUT GGC CAT CAG CGA CCA GGT  
 gly ala pro val gly arg gly arg ala arg pro ala pro pro gly his gln arg pro gly  
 121/41 151/51  
 TAT CGA GGT GGA AGC GGA CCG TGT TGG GAT GCA CCG CCA ACT TCC CCG CGA TCG CCG CGA  
 tyr arg gly gly ser gly arg cys trp asp ala arg pro thr cys arg arg ser arg arg  
 181/61 211/71  
 TGC TCA TCG GAA CCC GCG ACC CAC ACA ATG CCC GCA GCA CCG CAC GAC GGC GCC CCA CCG  
 cys ser ser glu pro ala thr his thr met pro ala ala pro his asp gly ala pro pro  
 241/81 271/91  
 GCT CTT GCA GTG ACC TGA TGA TCA CAC TCA CCC CCA TAA GGC TCG TCG GCT GCG CCT GAG  
 ala leu ala val thr OFA OFA OFA his ser pro pro OCH gly ser ser ala ala pro glu  
 301/101 331/111  
 CAA TGC ACT AAG TTT ACA CAA ACG GAC TTC TAA AAA CCT GCG GAG GTG GCG TCT ATG GCC  
 gln cys ser lys phe thr gln thr asp leu OCH lys pro ala gln val gly ser met ala  
 361/121 391/131  
 AAC AAA COT GCC AAT GCC GCG CAG COT CTC CCC TTG TCG GAT C  
 asn lys arg gly asp ala gly gln pro leu pro leu ser asp

SEQ ID N° 42A

FIGURE 42A

FEUILLE DE REMPLACEMENT (REGLE 26)